Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

UNITED STATES DEPARTMENT OF AGRICULTURE
BULLETIN No. 920

Contribution from the Office of Farm Management and Farm Economics
H. C. TAYLOR, Chief

Washington, D. C. PROFESSIONAL PAPER December 30, 1920

LIBRARY
RECEIVED
★ JAN 14 1921 ★
U.S. Department of Agriculture

FARM PROFITS

FIGURES FROM THE SAME FARMS FOR A SERIES OF YEARS

WASHINGTON COUNTY, OHIO, 25 FARMS, 1912-1918
CLINTON COUNTY, INDIANA, 100 FARMS, 1910 AND 1913-1918
DANE COUNTY, WISCONSIN, 60 FARMS, 1913-1917

By

H. M. DIXON, Associate Farm Economist, and
H. W. HAWTHORNE, Assistant Farm Economist

CONTENTS

	Page
Introduction	1
Sources and Character of Data	3
Summary	5
The Ohio Area	7
The Indiana Area	22
The Wisconsin Area	41
Good Management Increases Profits	55

WASHINGTON
GOVERNMENT PRINTING OFFICE
1920

UNITED STATES DEPARTMENT OF AGRICULTURE

BULLETIN No. 920

Contribution from the Office of Farm Management and
Farm Economics.

H. C. TAYLOR, Chief

Washington, D. C. PROFESSIONAL PAPER December 30, 1920

FARM PROFITS—FIGURES FROM THE SAME FARMS FOR A SERIES OF YEARS.

Washington County, Ohio, 25 Farms, 1912–1918.
Clinton County, Ind., 100 Farms, 1910 and 1913–1918.
Dane County, Wis., 60 Farms, 1913–1917.

By H. M. DIXON, *Associate Farm Economist*, and H. W. HAWTHORNE, *Assistant Farm Economist.*

CONTENTS.

	Page.
Introduction	1
Sources and character of data	3
Summary	5
The Ohio area	7
The Indiana area	22
The Wisconsin area	41
Good management increases profits	55

INTRODUCTION.

Are many farmers making large profits?

Are there many farmers who are making only a bare living?

How much do farmers make?

Have farmers' profits been greater during the recent years of relatively high prices for farm products than during former years of lower prices?

These are live questions, which concern everyone, farmers and city folk alike, and there are current many widely varying opinions about them. This bulletin, presenting facts as determined by repeated business analysis of groups of farms in three fairly distinct agricultural areas, is designed to throw light on these and other questions that arise in this connection.

While the findings of this study will not justify making flat generalizations as to what the profits of farming are for the country as a whole, they should have weight in the consideration of the general problem, since they represent the results of continuous studies in farm profits covering a longer period of years than any other thus far completed by the United States Department of Agriculture. For the farms studied these results show:

That comparatively few farmers make large profits.

That a considerable number of them are making but a bare living.

That most of them make a labor income of less than $500 per year, over and above the things the farm furnishes toward the family living, which, however, constitute an important factor.

That their average return on investment after deducting the value of their own labor was about 3½ per cent prior to 1916 and about 7 per cent for the years 1917–18.

In considering the business status of farming certain characteristics of the farm business should be kept clearly in mind. In the first place, farming is an individual business, operated and managed largely by individuals who vary widely in knowledge, ambition, and desires, and in their standards of living. Moreover, the farmer is not merely a laborer. He has money invested, and should receive interest on his investment and also pay for directing the business.

Another characteristic of the farm business that should be considered in a discussion of farm profits is the peculiarly close relation of the home to the business. From an abstract accounting standpoint it may be possible to separate entirely the farm business from the home, but in reality it occupies an important place in the farmer's mind in weighing the advantages of farming as compared with those of other lines of business.

Again, the prospect of an increase in the value of land has been a factor that has made many farmers content to accept a low rate of interest from the actual operation of the farm. As a matter of fact, a number of farmers are not making more than 2 to 3 per cent on investment, but in many areas the increase in land values has tended to offset this low return.

NOTE.—Certain terms used in this bulletin are here defined:

Farm capital.—The value at the beginning of the farm year of all real estate, machinery, live stock, and other investment used to carry on the farm business. It includes the value of the farm dwelling, but not of the household furnishings.

Receipts.—The amount received from the sale of crops, the increase from stock, and the receipts from outside labor, rent of buildings, etc. The increase from stock is found by subtracting the sum of the amount paid for stock purchases and the inventory value at the beginning of the year from the sum of the receipts from stock products, sales of live stock, and the inventory value at the end of the year. If the value of crops or supplies on hand at the end of the year was greater than at the beginning, the difference is considered a receipt.

Expenses.—The amount of money paid out during the year to carry on the farm business, together with the value of the unpaid labor performed by members of the family. If the value of crops or supplies at the end of the year was less than at the beginning, this was considered an expense. Household or personal expenses are not included.

Farm income.—The difference between receipts and expenses. It represents the amount of money available for the farmer's living above the value of family labor, provided he has no interest to pay on mortgages or other debts.

Labor income.—The amount that the farmer has left for his labor after 5 per cent interest on the farm capital is deducted from the farm income. It represents what he has earned as a result of his year's labor after the earning power of his investment has been deducted. In addition to labor income the farmer receives a house to live in, fuel (when cut from the farm), garden products, milk, butter, eggs, etc., as well

(Note continued on p. 3.)

These are factors that can not always be measured in dollars and cents in considering whether the farm business is profitable or not. From a strictly business standpoint, assuming that every business should pay a fair rate of interest on the investment therein and a fair return for the labor expended in its operation, there may be drawn rather definite conclusions relative to the farmer's returns. When these are made, however, the compensating factors, such as increase in value of land, the living furnished by the farm, the sentimental appeal of the home site, and the personal desires of the farmer, should be kept in mind.

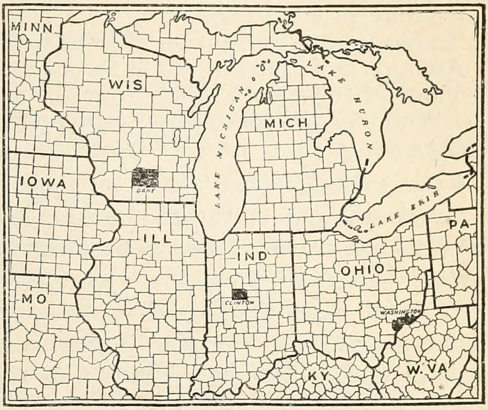

FIG. 1.—Map showing the location of the counties in which these studies were made.

SOURCES AND CHARACTER OF DATA.

This bulletin presents the data obtained through from five to seven years' continuous analyses of the business of 185 farms in three areas, one each in Ohio, Indiana, and Wisconsin. (See fig. 1.)

The data for the area in Ohio are for 25 farms for seven years, 1912–1918. These farms are located in Palmer township, Washington County—a township typical of the hill land of southern and eastern Ohio. The data for the area in Indiana are for 100 farms for seven years, 1910 and 1913–1918. These farms are located in Forest and Johnson townships, Clinton County—townships typical of crop and live-stock farming in north central Indiana. The data for the area in Wisconsin are for 60 farms for five years, 1913–1917. These farms

---

as the money earned by his capital. A "minus" labor income means that the farmer received no money returns above food, products, fuel, and house rent for his year's labor, and that he lacked the amount indicated by the minus sign of paying 5 per cent interest on the farm capital.

Per cent return on capital.—The rate returned on the farm capital after the value of the farmer's labor is deducted from the farm income. It represents what the investment earned after all expenses have been deducted and the farmer has received a fair wage for his labor. When the per cent return on the capital is preceded by the minus sign, it means that the farmer did not realize even fair wages for his own labor and management, thus leaving nothing for the earnings on the farm capital.

In computing the return on capital the values of supplies furnished by the farm toward the family living have not been carried in the financial accounts for the reason that if they are carried as a receipt to the farm they likewise must be added as a part of the farmer's own wages. The value given to the farmer's own labor is in addition to what the farm contributes toward his living.

Animal unit.—In order to compare the different classes of animals and to compute the total amount of live stock on these farms all stock has been computed in terms of animal units. In these areas one horse, cow, or steer was counted as one animal unit; two head of young stock (of the above kind) were counted as one animal; 7 sheep, 5 hogs, or 100 chickens were each counted as one animal unit. The number of productive animal units includes all stock except work stock.

are located in Verona and adjoining townships, Dane County—a typical area of the dairying region of southern Wisconsin.[1]

In each area, for the period of the investigation, figures are shown covering the following points:

Distribution of farm area.
Crop yields.
Amount of work stock and of other live stock.
Amount of labor used.
Amount and distribution of farm capital.
Amount and distribution of farm receipts and farm expenses.
Value of the family living direct from the farm.
Amount of the more important products sold and prices received for them.

Farm earnings have been computed as follows:

1. *Farm income.*—The combined earnings for the farm capital and for the farmer's own labor and management, found by deducting the farm expenses from the farm receipts.

2. *Labor income.*—The earnings for the farmer's own labor and management after charging 5 per cent interest for the use of the farm capital. (This is in addition to supplies furnished by the farm toward the family living.) The labor income is found by deducting from the farm income a fair rate of interest on the farm capital.

3. *Per cent return on capital.*—The earnings for the farm capital after allowing for the farmer's own labor and management. This is found by deducting from the farm income a conservative charge for the farmer's own labor and management.

4. *Family income.*—The combined income of the farmer and of his family. This is found by deducting the total expenses (excluding

---

[1] The authors are greatly indebted to those who cooperated in the study, as the success of conducting these investigations over this period of time is primarily dependent upon the diligent and painstaking efforts of the men performing the field work and the cooperating farmers. The farmers showed increased interest in these studies from year to year. Some began keeping accounts, others kept accounts in more detail than formerly that the data might be more complete. Acknowledgment is hereby tendered to the following named persons for their cooperation in obtaining these data, which should be an aid to farmers in general as well as to others, in a better understanding of the economics of the farm business:

Ohio area.—The Ohio study was conducted each year by Mr. H. W. Hawthorne, assisted at various times by Messrs. E. D. Strait, C. E. Hope, R. D. Jennings, Bruce McKinley, Office of Farm Management; and Mr. S. C. Hartman, of the Ohio Experiment Station. The results of the first five years of this survey were published in U. S. Department of Agriculture Bulletin 716, "A Five-Year Farm Management Survey in Palmer Township, Washington County, Ohio, 1912–1916" (Hawthorne).

Indiana area.—The work in this area was started by Mr. E. H. Thomson for the year 1910, and in addition to the authors, the following investigational force assisted in one or more years of this study: Messrs. H. F. Williams, O. S. Rayner, E. M. McGrew, E. L. Currier, C. Wentsel, W. C. Funk, E. D. Strait, F. H. Shelledy, C. C. Taylor, H. R. Smalley, H. N. Humphrey, J. C. Rundles, T. H. Summers, W. I. Myers, Chas. E. Miller, A. P. Brodell, R. D. Jennings, Office of Farm Management, and W. L. Elser, Lynn Robertson, and W. W. Sylvester, of the Indiana Experiment Station. The results of the first year of this study were published in U. S. Department of Agriculture Bulletin 41 (Thomson and Dixon).

Wisconsin area.—This study was in cooperation with the Wisconsin Experiment Station and was conducted under the supervision of Dr. H. C. Taylor, assisted by Messrs. H. W. Hawthorne, O. A. Juve, S. W. Mendum, C. L. Holmes, J. A. Becker, H. O. Watrud, G. W. Forster, W. I. Myers, and student assistants. The results of this study were published in Wisconsin Experiment Station Bulletin No. 300, "War Prices and Farm Profits" (Taylor and Mendum).

Acknowledgment is also due Miss Mabel G. Darcey and staff of clerical assistants for compilation of these data.

value of family labor and including interest on any indebtedness) from the total farm receipts.

5. *Family living from the farm.*—The value of food products, fuel, and house rent furnished directly by the farm toward the family living. This form of income has been considered in addition to farm income and labor income.

SUMMARY.

The average farm income of 25 farmers in Palmer township, Washington County, Ohio, for the seven years 1912 to 1918 was $610, the labor income $276, and the return on the capital 4.6 per cent.

The average farm income of 100 farmers in Forest and Johnson townships, Clinton County, Ind., for the seven years 1910 and 1913 to 1918 was $1,856, the labor income $558, and the return on the capital 5.7 per cent.

The average farm income of 60 farmers in Verona and adjacent townships, Dane County, Wis., for the five years 1913 to 1917 was $1,293, the labor income $408, and the return on the capital 4.7 per cent.

A considerable part of the farmers' living came directly from the farm. In the Ohio area the value of the items food, fuel, and house rent furnished by the farm was estimated at $359 per farm for the seven-year average, increasing from $300 in 1912 to $494 in 1918; in the Indiana area the value of these items was estimated at $425 per farm, increasing from $356 in 1910 to $620 in 1918; in the Wisconsin area the five-year average value of these items was $391, increasing from $351 in 1913 to $525 in 1917.

Prior to 1916 the price level of farm products was much below that of more recent years. For the years of lower prices the farm earnings in each of these three areas were very low, but with the higher prices of 1916, 1917, and 1918 the returns were more satisfactory.

In the Ohio area the average farm income for the four years 1912 to 1915 was $468; and for the three years 1916 to 1918, $800; the labor income for the former period was $153, and for the latter period $441; the return on the capital from 1912 to 1915 was 2.8 per cent, and from 1916 to 1918, 6.6 per cent.

In the Indiana area the average farm income for the four years 1910 and 1913 to 1915 was $1,407; and for the three years 1916 to 1918, $2,454; the labor incomes for the two periods were $205 and $1,028, respectively; and the return on capital 4.5 per cent and 7.0 per cent.

In the Wisconsin area the average farm income for the three years 1913 to 1915 was $985, and for the two years 1916 and 1917, $1,754; the labor income was $113 for the three-year period and

$850 for the two-year period; the return on capital was 3.2 per cent and 6.8 per cent for the respective periods.

None of the 185 farmers in these three areas made as much as $1,000 labor income every year. Four (2 per cent) made over $500 labor income every year, one each in the Ohio and Indiana areas, and two in the Wisconsin area. Thirty-three farmers (18 per cent) failed to make a $500 labor income in any year of the period, 10 each in the Ohio and Indiana areas and 13 in the Wisconsin area.

Four farmers (2 per cent), after allowance is made for the value of their own time, made over 5 per cent return on their farm capital every year, 1 in the Ohio area, 2 in the Indiana area and 1 in the Wisconsin area; 18 (10 per cent) did not reach 5 per cent return on the farm capital in any one year, 4 in the Ohio area, 5 in the Indiana area and 9 in the Wisconsin area.

Averaging labor income over the several years, 14 per cent of all the farmers failed to make any labor income, and 14 per cent made over $1,000, but most of them made between $1 and $1,000, 84 per cent of the farmers in the Ohio area falling within this range, 70 per cent in the Indiana area, and 72 per cent in the Wisconsin area.

The returns on the farm capital when averaged for the period of years ranged from 2 per cent to 8 per cent on most farms, 52 per cent of the farms in the Ohio area falling within this range, 86 per cent of those in the Indiana area, and 78 per cent of those in the Wisconsin area.

Eighteen farmers (18 per cent) in the Indiana area made over $1,000 labor incomes for the seven-year average, and 7 (12 per cent) in the Wisconsin area for the five-year average. After making a fair allowance for their own wages, 3 farmers (12 per cent) in the Ohio area realized over 8 per cent return on the farm capital for the average of the seven-year period, 10 (10 per cent) in the Indiana area, and 3 (5 per cent) in the Wisconsin area for the five-year period. The greater ability of these farmers, as expressed by the size of their business, their crop yields, their live-stock returns per animal, and the efficient use of labor, won for them the higher returns. While these farmers were getting very good returns, 4 others (16 per cent) in the Ohio area, 12 (12 per cent) in the Indiana area, and 10 (16 per cent) in the Wisconsin area failed to make any labor income. After making due allowance for their own time, 9 (36 per cent) in the Ohio area, 4 (4 per cent) in the Indiana area, and 10 (16 per cent) in the Wisconsin area realized less than 2 per cent return on their farm capital.

Four farmers (16 per cent) in the Ohio area, 32 (32 per cent) in the Indiana area, and 18 (30 per cent) in the Wisconsin area made average labor incomes ranging from $500 to $1,000; and 8 (32 per cent) in the Ohio area, 54 (54 per cent) in the Indiana area, and 25 (42 per cent) in the Wisconsin area realized a return ranging from 5 per cent to 8 per cent on the farm capital.

Many farmers receive low returns for their own labor if the capital represented in the business is allowed a fair rate of interest. Even with a low labor income, the available income of a given farm may be fairly large, if the owner is free from debt. On farms where a relatively large capital is represented the interest on capital may be enough to make the business apparently prosperous.

In figures 6, 12, and 18, the disposition of the farmer's gross income for the three areas is portrayed graphically. Just how much of the income goes for operating expenses, interest on capital, pay for labor performed by members of the farmer's family, the amount left for pay for the farmer's own labor and the value of food, fuel and house rent furnished the farm family may be observed from these charts. The increases in farm earnings for the later years covered by these studies has been more apparent than real, because of the decreased purchasing power of the dollar.

THE OHIO AREA.

The area in Ohio is representative of much of the hill land bordering the Ohio River. The topography grades from rolling to steep and is often rocky. Large unbroken fields are seldom found. The farms are from 4 to 9 miles from railroad points, and the wagon roads are hilly and unimproved. The farmers practice a general or mixed type of farming.

THE FARM BUSINESS.

A summary of the farm business for the 25 farms, over the seven-year period 1912 to 1918, is shown in Table I.

TABLE I.—*Summary of the farm business over a period of seven years, 1912–1918, Palmer township, Washington County, Ohio (average of 25 farms).*

	1912	1913	1914	1915	1916	1917	1918	7-year average.
Acres per farm	158	156	154	154	156	164	167	158
Acres in pasture	76	77	79	75	76	80	83	78
Acres in corn	10	10	10	11	11	12	11	11
Acres in wheat	9	10	6	10	10	10	11	10
Acres in hay	20	18	18	18	21	19	21	19
Acres in other crops	5	4	5	5	4	5	5	4
Corn per acre....bushels	45	52	41	42	34	43	29	41
Wheat per acre....do	15	9	18	18	10	15	13	14
Hay per acre....tons	1.5	1.1	.9	1.1	1.5	1.2	1.2	1.2
Productive animal units	13.5	14.4	15.3	14.9	16.1	17.3	17.2	15.5
Cows....number	2.8	3.1	3.4	3.8	4.3	4.7	4.6	3.8
Ewes....do	18.9	21.5	13.4	14.2	12.6	11.5	14.0	15.2
Brood sows....do	1.0	1.0	1.1	1.1	1.0	1.1	1.0	1.0
Chickens....do	117.0	130.0	131.0	143.0	143.0	143.0	140.0	135.0
Work stock....do	2.6	2.7	2.6	2.8	2.7	2.9	2.8	2.7
Receipts per animal unit	$43	$45	$46	$45	$52	$73	$69	$53
Months of labor	17.4	17.0	17.6	17.1	17.3	17.8	18.0	17.5
Farm capital	**$6,087**	**$6,214**	**$6,422**	**$6,527**	**$6,639**	**$7,163**	**$7,726**	**$6,682**
Real estate	4,728	4,711	4,735	4,811	4,878	5,247	5,275	4,912
Live stock	781	929	1,029	1,076	1,097	1,228	1,565	1,101
Machinery	295	307	323	326	345	353	364	330
All other	283	267	335	314	319	335	522	339
Real estate per acre	30	30	31	31	31	32	32	31
Receipts	**$868**	**$796**	**$934**	**$916**	**$1,112**	**$1,571**	**$1,476**	**$1,096**
	Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
Dairy products	3	5	5	7	7	6	6	6
Cattle	16	22	18	21	23	27	25	22
Poultry and eggs	17	20	19	18	18	16	18	18
Sheep and wool	20	12	13	12	12	18	15	15
Hogs	7	13	16	13	13	13	15	13
Crops	26	10	16	20	16	14	13	17
All other	11	18	13	9	11	6	8	9
Expenses	**$412**	**$375**	**$423**	**$430**	**$456**	**$547**	**$757**	**$486**
	Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
Hired labor	12	12	11	10	13	14	11	12
Family labor	21	23	22	21	18	19	18	20
Repairs and depreciation, machinery	7	8	7	7	7	6	5	6
Repairs and depreciation, house	4	5	4	4	3	3	2	3
Repairs and depreciation, other buildings	6	6	6	6	6	6	4	6
Repairs, fences	3	3	3	3	2	2	2	2
Feed purchased	11	6	13	11	14	17	28	16
Seed purchased	5	5	6	6	5	3	4	5
Fertilizer	10	9	10	11	10	10	9	10
Machine work, hired	5	4	3	4	5	2	4	4
Taxes and insurance	12	14	12	13	12	11	9	12
Other	4	5	3	4	5	7	4	4
Farm income	**$456**	**$421**	**$511**	**$486**	**$656**	**$1,024**	**$719**	**$610**
Interest on capital, 5 per cent	304	311	321	327	332	358	386	334
Labor income	**152**	**110**	**190**	**159**	**324**	**666**	**333**	**276**
Operator's labor	288	281	295	290	298	332	347	304
Return on capital....per cent	**2.8**	**2.2**	**3.4**	**3.0**	**5.4**	**9.7**	**4.8**	**4.6**
Value of family labor	$86	$85	$92	$90	$82	$105	$133	$96
Interest on indebtedness	19	19	14	12	9	7	5	12
Family income	**523**	**487**	**589**	**564**	**729**	**1,122**	**847**	**694**
Family living from farm [1]	**300**	**302**	**311**	**317**	**345**	**443**	**494**	**359**
Amount sold:								
Cattle....number	3	2	3	3	3	4	3	3
Eggs....dozen	628	648	779	725	696	623	642	677
Wool....pounds	419	405	294	316	335	165	170	301
Hogs....number	5	7	11	11	8	9	9	9
Wheat....bushels	57	15	35	83	32	55	35	45
Prices:								
Cattle....cwt	$5.70	$7.13	$6.97	$7.29	$8.20	$8.32	$10.24	$7.69
Eggs....dozen	.19	.19	.19	.19	.22	.31	.34	.23
Wool....pound	.23	.20	.25	.26	.31	.65	.65	.36
Hogs....cwt	6.52	8.20	8.10	6.60	8.50	12.94	15.87	9.53
Wheat....bushel	.98	.97	1.19	1.15	1.52	2.01	2.02	1.40

---

[1] Figures obtained from the farmers for 1916 and computed for the other years with aid of index figures shown in War Industries Bulletin No. 1.

DISTRIBUTION OF FARM AREA.

The farms averaged 158 acres, approximately one-half of which was used for pasture and one-fourth for growing crops. Of the crop land, one-fourth was in corn, one-fourth in small grains, mainly wheat, and one-half in hay.

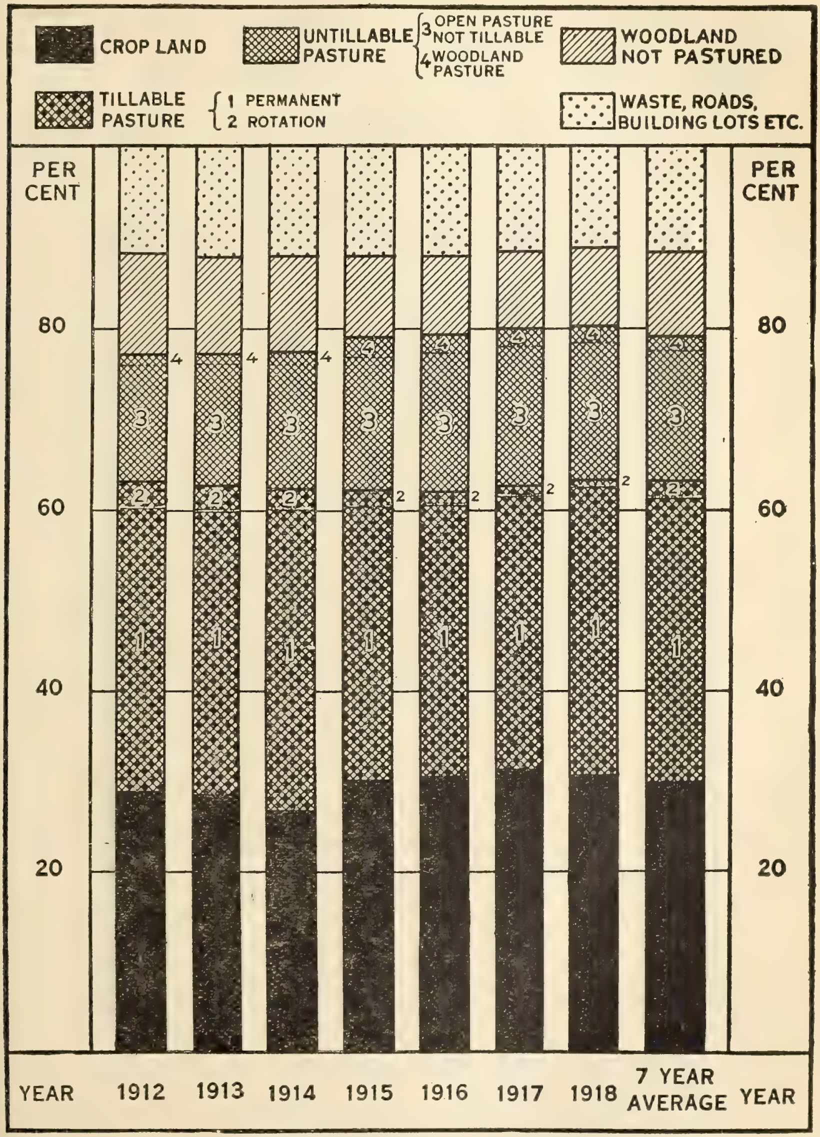

FIG. 2.—Distribution of farm area on 25 farms, Palmer township, Washington County, Ohio, 1912–1918. A large proportion of the farm area is not adapted to cultivation.

In figure 2 the distribution of the farm area is shown graphically for the average of the 25 farms over the period of study. During the latter years of the study the crop area was slightly increased by reduction of tillable land in pasture. Some of the woodland was also cleared for pasture. Woodland and land taken up by roads, streams, waste, etc., occupies a considerable proportion of the farm area in this section.

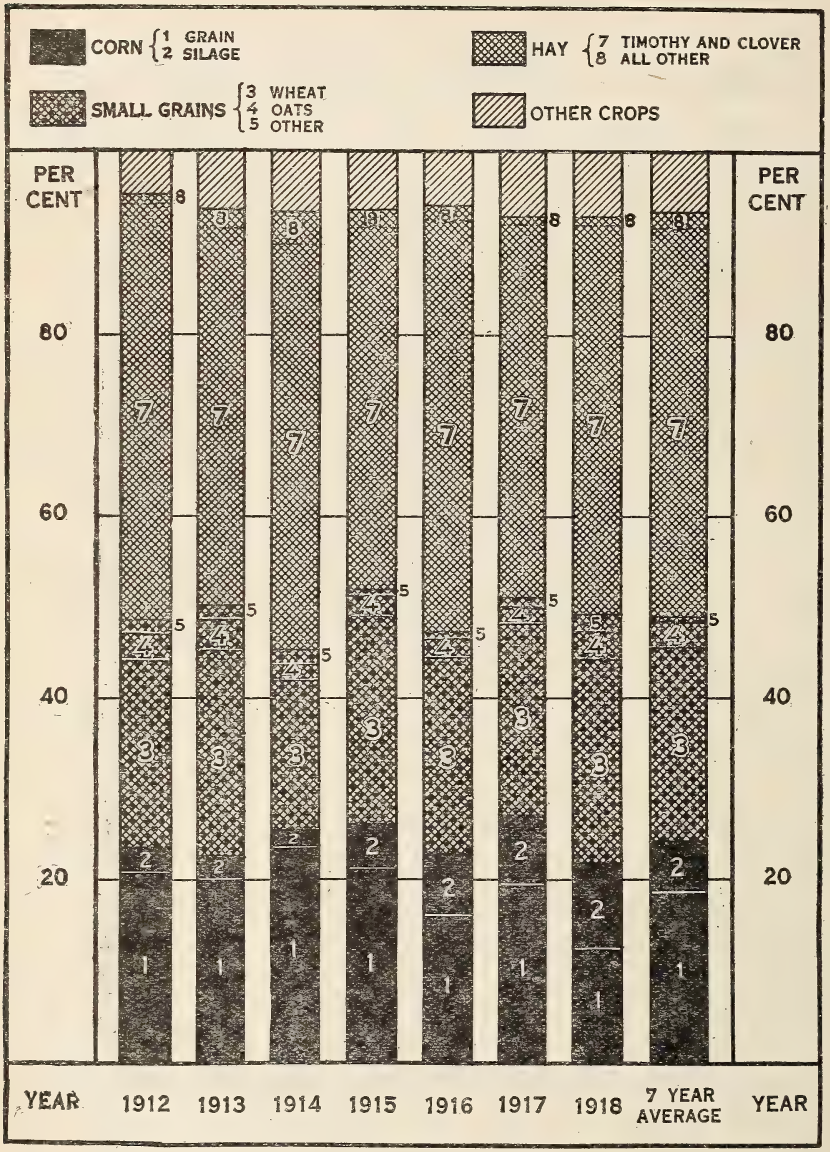

FIG. 3.—Distribution of crop area on 25 farms, Palmer township, Washington County, Ohio, 1912–1918. The years 1915 and 1917 show the largest proportional areas of corn and small grains. In 1918 the poor yield of corn (see Table I) made it necessary to use nearly one-half the crop in filling the silo.

Figure 3 shows graphically the average distribution of the crop area. This chart shows the importance of the three crops, corn, wheat, and hay in the organization of these farms, and the variation in the acreage of each over the seven-year period. The use of the silo is being increased in this area. The variation in the proportion of the corn area used for silage was also affected by the yield; 1916 and 1918 were the years of poorest yields and therefore the years requiring the larger proportion of the corn crop to fill the silo.

CROP YIELDS.

The average yield of corn for the seven-year period was 41 bushels per acre; the lowest average yield for any year was 29 bushels in 1918, and the highest 52 bushels in 1913. The average yield of wheat was 14 bushels per acre, ranging from an average of 9 bushels in 1913 to that of 18 bushels in 1914 and 1915. The average yield of hay was 1.2 tons, being as low as 0.9 ton in 1914 and as high as 1.5 tons in 1912 and 1916. The highest yield of corn was accompanied with the lowest yield of wheat, and an average yield of hay; the lowest yield of corn was accompanied by average yields of wheat and hay. Of the total production, 35 per cent of the wheat was sold, 15 per cent of the hay, 9 per cent of the oats, and 6 per cent of the corn.

LIVE STOCK.

There was an increase in the stock kept on these farms during this period. This increase, representing 3.7 animal units, or over 25 per cent, taken together with rising prices, had much to do with the increase in income. The live stock (exclusive of work horses) when expressed in equivalents of mature cattle, or in what is termed, "a productive animal unit," averaged 15.5 units per farm. This is an average of one head to each 7.9 acres of crops and pasture. The number of cattle increased and that of sheep decreased during the first six years. A small increase in sheep was shown in 1918 over that of 1917. When measured by the amount of feed required, cattle represented 58 per cent of all live stock except work horses, sheep 17 per cent, hogs 10 per cent, and poultry 11 per cent. The number of work horses averaged 2.7 per farm.

LABOR REQUIRED.

It required, on the average, 17.5 months of man labor to operate these farms, of which 12 months represented the farmer's own labor, 3.7 months unpaid family labor, and 1.8 months hired labor. This means that 90 per cent of the labor is performed by the farmer and members of his family, and 10 per cent is hired from the outside. The amount of labor for the various years remained practically constant.

FARM CAPITAL.

The average capital value of these farms was $6,682, of which $4,912, or about three-fourths, was in real estate, $1,101, or 15 per cent, in live stock, $330, or 5 per cent, in machinery, and $339, or 5 per cent, in supplies and operating cash. The value of land, exclusive of buildings, averaged $2,982 per farm, or 45 per cent of the total farm capital. Real estate averaged $31 per acre, with only a slight increase during the seven years. It is doubtful if the increase shown covered the cost of additional improvements put on these farms.

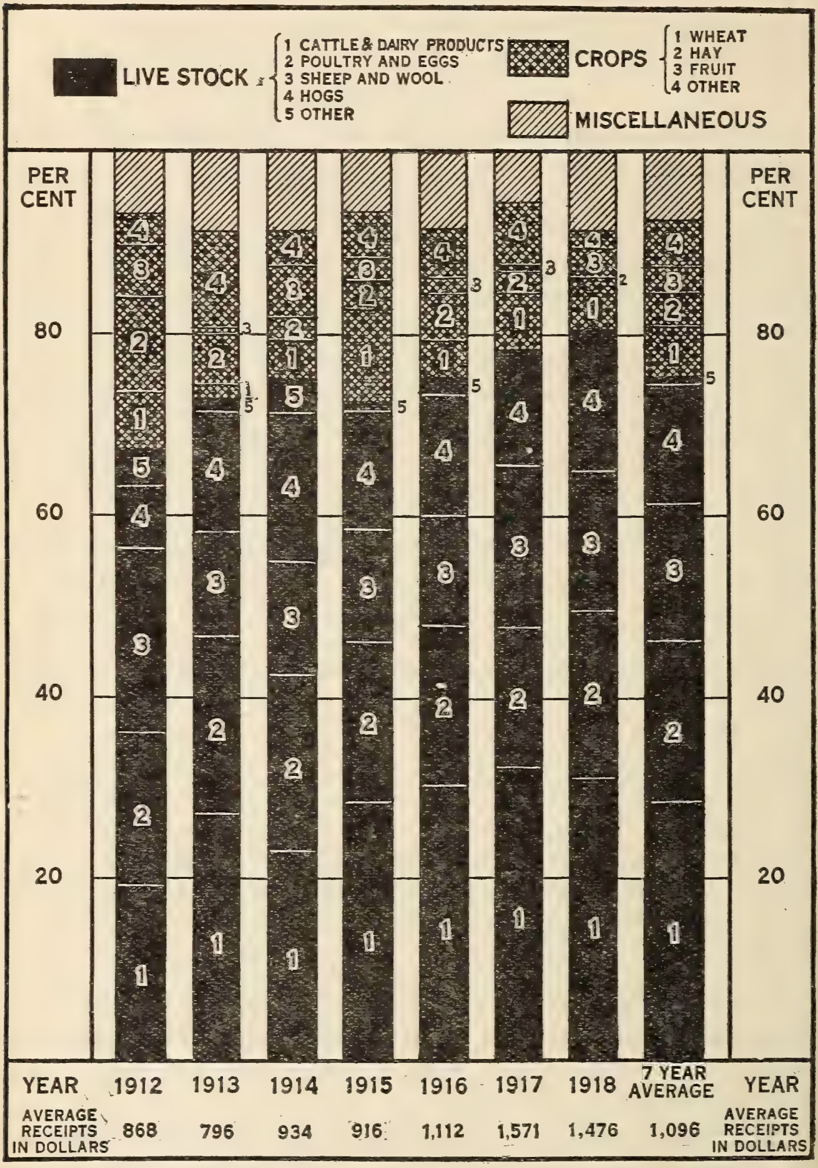

FIG. 4.—Distribution of receipts on 25 farms in Palmer township, Washington County, Ohio, 1912–1918. Live stock contributed the greatest share of the income in this area. In 1912 crops contributed 26 per cent of the year's income and in 1918 only 11 per cent.

RECEIPTS.

The farm receipts in this area amounted to $1,096 per farm for the seven-year period, ranging from $796 in 1913 to $1,571 in 1917. The slight decrease in 1918 over receipts for 1917 was due to the shortage of crops. There is a large diversity in the sources of income on these farms. The sales of live stock, together with such products as butter, cream, eggs, and wool, amounted to $819 per farm, while the sales of crops amounted to $180 per farm.

Figure 4 shows graphically the average distribution of receipts over the period. Live stock, it will be observed, constituted 67 per cent of the total receipts in 1912, and 78 per cent in 1918. Hogs and cattle show the largest increases and sheep the largest decline. Poultry has maintained practically the same relation to the business as a whole throughout the period. Since these farmers are located a considerable distance from market, many of them have made a practice of using a large share of their wheat crop as poultry feed. The items of greatest variation in receipts on these farms over the periods were wheat and fruit. Apples made a good crop three out of the seven years.

In addition to receipts from live stock, butter, cream, eggs, wool, and farm crops, many of the farmers received some money from the sale of lumber, posts, wood, or shackle poles, for the rent of pasture or farm buildings, for the use of part of the farm equipment, such as the farm machinery or the farm team, and for part of their own labor or time. These have all been considered receipts of the farm business and designated "miscellaneous receipts." They totaled $81 per farm, and made up a little less than one-tenth of the total farm receipts.

EXPENSES.

All costs in connection with operating the farm business, above those of interest upon capital and the value of the farmer's own labor, are included in the farm expenses. For the seven-year period these averaged $486 per farm, representing 44 per cent, or almost one-half the farm receipts. These expenses include $96 for the value of labor performed by the farm family. The farm expenses for the seven-year period are shown in Table I. The variation for the first five years was small, but the advance for the last two years is quite marked. For one year they were 23 per cent below the seven-year average and for the last year (1918) they were 55 per cent above the average. The expenses have been grouped into 12 classes, namely, hired labor, unpaid family labor, repairs and depreciation of machinery, repairs and depreciation of house, repairs and depreciation of other buildings, repairs to fences, feed purchased, seed purchased, fertilizer, machine work hired, taxes and insurance, and other. The proportion each class represented of the total expenses each year and for the seven-year period is shown graphically in figure 5. While the cost for the various classes of expenses increased the proportion remained fairly constant. The item of feed purchased showed the greatest variation, being directly affected by the production of the various feed crops raised each year.

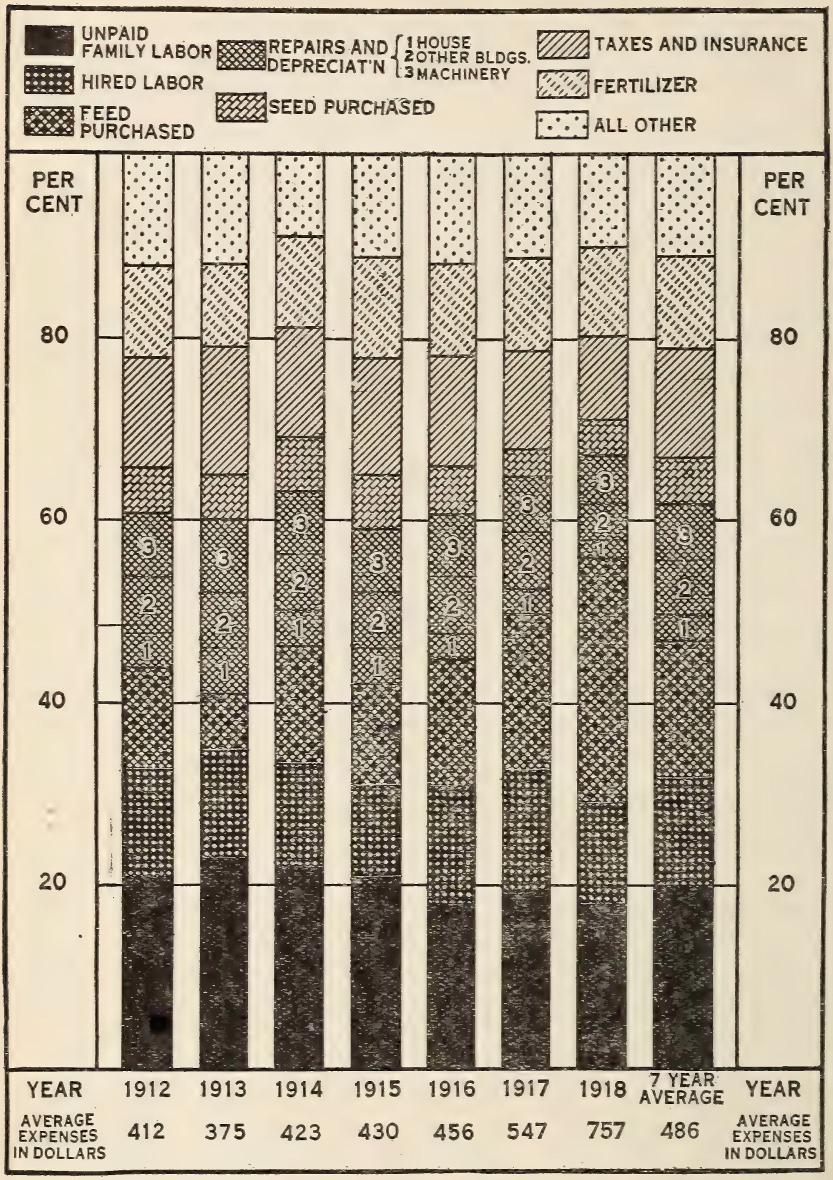

FIG. 5.—Distribution of expenses on 25 farms, Palmer township, Washington County, Ohio. The poor yield of corn in 1918 made the feed bill a very large item of expense. Most of the items of expense retain about the same proportions to the total expense over the period of study.

The average expenses for the seven-year period were 44 per cent of the receipts. When the value of the farmer's own labor and

5 per cent interest on the capital is added to expenses, the total cost is 3 per cent in excess of receipts.

FARM EARNINGS.

From a study of the receipts and expenses it is seen that both showed a marked increase during the period. Comparing the first two years with the last two, it is seen that receipts increased 83 per cent and expenses 66 per cent, thereby leaving a considerable larger farm income for the latter years than for former years, as the farm income represents the difference between receipts and expenses. For the seven-year period the farm income averaged $610 per farm. This was highest in 1917 ($1,024) and lowest in 1913, when it fell to only $421 per farm.

The labor income, which is found by deducting from the farm income 5 per cent interest on the capital, and represents the amount left for the farmer's own labor and management (in addition to farm-furnished products), averaged $276 per farm for the seven-year period. The labor income was less than $200 per farm for each of the first four years; in 1917 it reached $666.

The average value of the farmer's own labor and management was $304, in addition to the supplies furnished by the farm. The value of his labor increased from $281 in 1913 to $347 in 1918. If the value of his labor be deducted from the farm income, the remainder represents the earnings of the capital, which was 4.6 per cent for the seven-year period. The average return varied from 2.2 per cent in 1913 to 9.7 per cent in 1917. It was less than 4 per cent for each of the first four years, and in only one year (1917) did it exceed 6 per cent.

Beginning with 1916 the prices of farm products were on a much higher level than in previous years. The average labor income of the 25 farms in this area for the four years 1912 to 1915 was $153; for the three years 1916 to 1918 it was $441. The return on capital for the earlier period averaged 2.8 per cent and for the later period 6.6 per cent.

The family income, which represents the amount of money available to the family after deducting from the total receipts all farm expenses and interest paid on indebtedness, averaged $694 per farm.

The interest on indebtedness was a small item to the farmers in this area, as only a part of them carried mortgages and most of those reported were small. In 1912, one-third of the farmers had indebtedness varying in amount from $150 to $3,000; in 1918, only one in eight was in debt. During the intervening period the mortgages on five farms were paid off with money made from the farming, and on three others the mortgages were decreased, while the amount was increased in but one case. Indebtedness decreased most rapidly during the years showing greater profits, while in 1913, the year returning least profits, there was no decrease in the indebtedness.

Figure 6 portrays graphically the distribution of the average gross income on these farms for each year and for the seven-year average. The chart shows how much of the gross income is represented in operating expenses, interest on capital, unpaid family labor, labor income, and food products, fuel and house rent furnished by the farm.

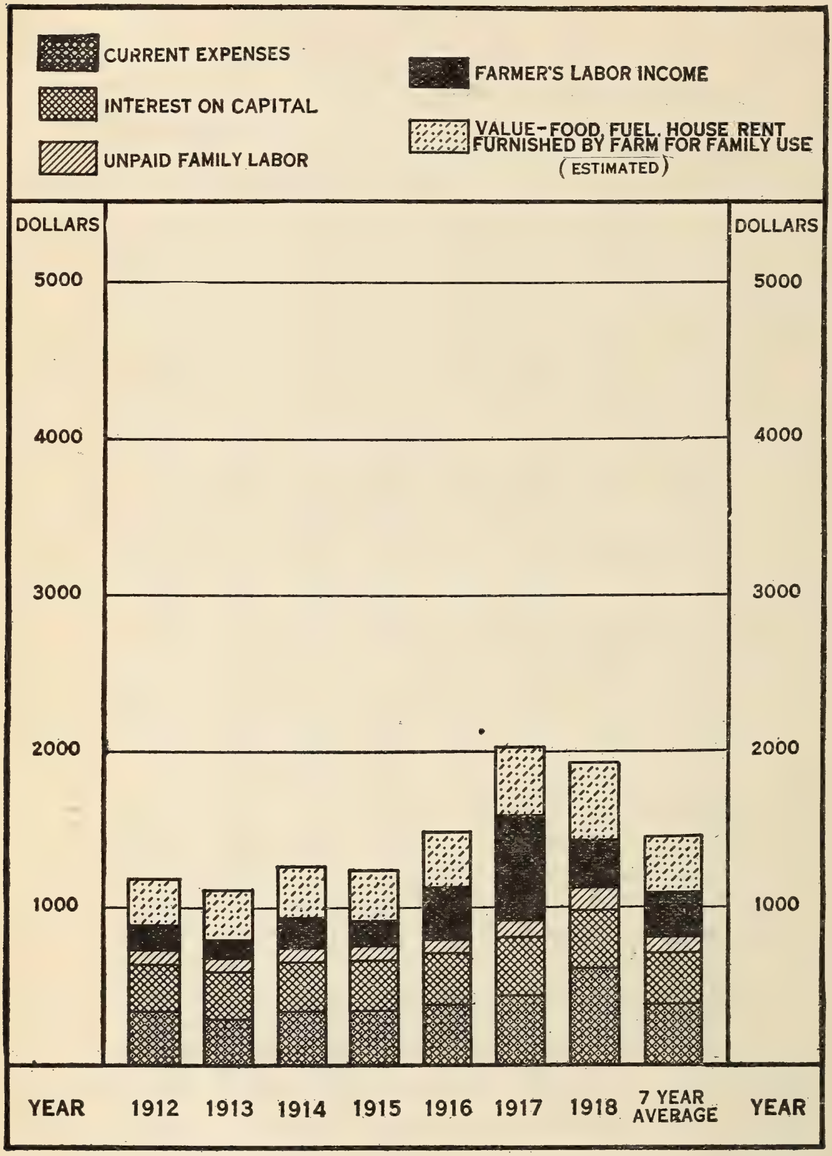

FIG. 6.—Distribution of gross income on 25 farms, Palmer township, Washington County, Ohio. Even with the low price of land in this area ($31 per acre) it will take a long time to pay for a farm from the profits of the average business. The year 1918 was discouraging, as receipts were below those of 1917, while expenses had materially increased.

FAMILY LIVING FROM THE FARM.

Farm receipts, farm income, labor income, and value of farmer's labor, as already discussed, do not include the value of the family living from the farm. It is well understood that a very significant proportion of the farmer's family living comes directly from the farm. This may be considered as a form of income additional to that of farm receipts, farm income, or labor income. An estimate of the value of the items food, fuel, and house rent thus furnished in this area was $359 per farm for the seven-year average, having increased from $300 in 1912 to $494 in 1918.

PRODUCTS SOLD AND PRICES RECEIVED.

The amount of farm products produced for sale or for use in increasing the size of the farm business is of value in determining the possibilities of success in various areas. While it is important that a farm be so organized as to contribute liberally toward the farmer's living, a farm can not be considered a profitable business until it is yielding enough products for sale to maintain itself adequately as a business organization. It was not possible to reduce to quantity form all the various products sold from these farms, but in Table I are shown the amounts for the more important sources of income. The number of cattle for the seven-year period averaged 3 head, eggs 677 dozen, wool 301 pounds, hogs 9 head, and wheat 45 bushels. The most cattle were sold in 1917, the most eggs in 1914, the most wool in 1912, the most hogs in 1914–15, and the most wheat in 1915.

The prices also which the farmers received over the seven-year period for these products are shown in Table I. In 1912 the average price received for cattle was $5.70 per hundredweight, in 1916 it had advanced to $8.20, and in 1918 to $10.24. Eggs for the first four years remained at 19 cents per dozen, but in 1918 had advanced to 34 cents. Wool showed a large advance in 1917 and remained at the same price (65 cents per pound) for 1918. In 1913 and 1914 the increased price of hogs brought increased production, but with the drop in price in 1915 the production the following year was decreased. From a study of the production and prices shown in this table it is evident that the increase in profits was due more to increased prices than to increased production.

LABOR INCOME AND RETURN ON CAPITAL OVER THE SEVEN-YEAR PERIOD.

The labor income for each of the 25 farmers is shown for each year in Table II, and the per cent return on the capital in Table III. The farms in each table are arranged beginning with the farm having the highest seven-year average labor income. The labor incomes are also shown graphically in figure 7.

TABLE II.—*Labor income of the 25 farms in Palmer township, Washington County, Ohio, 1912–1918.*

[Arranged according to size of the seven-year average labor income.]

Rank of farms.	7-year average.	1912	1913	1914	1915	1916	1917	1918
1	$824	$559	$776	$661	$603	$705	$1,680	$782
2	722	236	396	811	389	578	1,352	1,292
3	618	220	273	−21	397	1,022	1,485	953
4	616	528	282	205	251	636	991	1,418
5	488	247	339	403	303	524	850	753
6	474	245	528	464	658	372	435	619
7	462	414	−339	−178	609	976	774	981
8	459	429	344	622	411	134	902	369
9	417	− 20	159	484	108	415	985	785
10	386	419	191	228	253	294	974	340
11	303	126	− 37	596	−328	443	1,444	−124
12	233	105	141	206	93	325	583	177
13	224	93	118	253	139	279	410	278
14	201	−157	219	102	158	287	695	102
15	198	− 11	−116	166	158	309	418	464
16	137	176	−160	− 63	254	69	618	67
17	137	10	− 6	155	34	218	524	26
18	116	57	186	250	193	80	209	−160
19	113	− 12	43	108	109	90	422	34
20	85	152	34	−116	68	295	233	− 69
21	44	103	−145	−182	−122	59	412	185
22	− 2	− 9	83	− 67	− 33	− 19	89	− 58
23	− 8	122	−153	− 40	−211	− 10	474	−240
24	−161	−131	−189	−170	−202	213	−179	−469
25	−178	−108	−226	−120	−306	−182	−127	−177
Average	276	152	110	190	159	324	666	333
Maximum	824	559	776	811	658	1,022	1,680	1,418
Minimum	−178	−157	−339	−182	−328	−182	−179	−469
Index[1]	100	55	40	67	58	117	241	121

[1] Represents the per cent the labor income each year was of the seven-year average ($276=100).

Following the labor incomes of each farmer over the seven-year period, it is seen that 9 of the 25 farmers made a labor income every year after paying all other expenses (in other words they had plus labor incomes each year); 6 farmers had labor incomes for six of the seven years, and so on. One farmer failed to make a labor income in any of the seven years.

The $1,000 labor income mark was reached only in an occasional year and then by only a few farmers. Not a farmer reached $1,000 labor income every year. Two farmers had better than $1,000 labor income for two years, and three farmers for one year.

Ten of the 25 farmers did not reach a $500 labor income in any year and but 1 had over $500 every year. For the seven-year average, only 4 farmers exceeded a $500 labor income; that of 7 ranged from $300 to $500; that of 10 others was between $1 and $300, while 4 failed to make 5 per cent on capital, with no returns for their own labor outside of the farm-furnished supplies. The four last mentioned had seven-year average minus labor incomes.

Comparing the labor income returned on these farms each year with the value each farmer placed upon his labor for each year, it is found that one-fourth of the farmers got what they considered fair pay for their labor almost every year, and one-fourth of them about one-half of the years, while the other one-half received reasonable pay for their labor only three years or less of the seven.

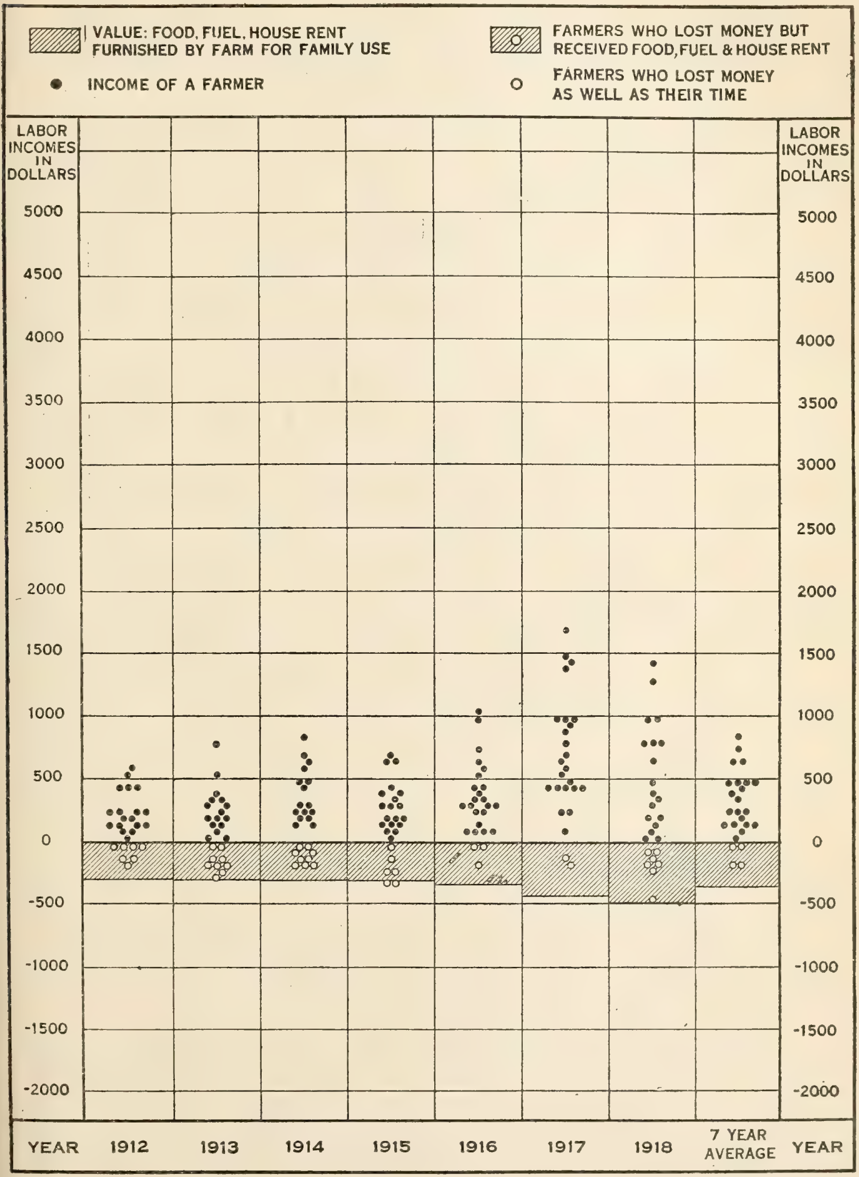

FIG. 7.—The labor incomes of 25 farmers, Palmer township, Washington County, Ohio, 1912–1918. Each dot in this figure represents the labor income of one farmer. The farmers shown in the shaded area of the chart had only the food products, fuel and house rent for their year's labor, and less than 5 per cent on their investment. The white dots below the shaded area represent farmers whose losses were in excess of average value of supplies furnished by the farm for family use. (Fig. 7 is drawn on the same scale as fig. 13 and fig. 19 in order that some comparison of the profits in the three areas may be made.)

In 1912 and 1913, 5 of the 25 farmers made in labor income what they considered their year's labor worth, in addition to food, fuel, and house rent furnished by the farm; in 1914 and 1915, 9; in 1916, 12; in 1917, 19; and in 1918, 11.

TABLE III.—*Per cent return on capital on the 25 farms in Palmer township, Washington County, Ohio, 1912-1918.*

(Ranked according to size of the seven-year average labor income.)

Rank of farms.	7-year average	1912	1913	1914	1915	1916	1917	1918
1	9.3	8.7	9.7	8.4	7.9	7.9	15.3	7.3
2	8.1	4.2	6.1	11.0	6.1	8.2	12.2	8.8
3	7.6	3.9	1.4	1.5	6.1	12.7	17.1	10.9
4	10.5	11.9	4.4	2.0	3.5	14.9	21.9	25.0
5	7.2	4.4	5.5	6.3	5.0	7.6	11.6	10.2
6	7.0	4.3	8.1	7.1	9.6	5.9	6.7	7.7
7	5.5	5.3	.3	1.5	6.5	9.2	7.3	8.2
8	7.4	7.5	5.8	10.9	6.9	2.1	13.7	4.6
9	7.2	1.2	2.3	8.6	3.1	7.5	15.9	11.9
10	6.6	7.9	4.2	3.8	4.3	4.9	15.6	5.6
11	4.9	3.6	2.4	7.2	.6	5.8	12.3	2.7
12	2.7	1.0	1.2	1.7	.5	4.2	8.1	2.3
13	5.7	−2.7	4.1	8.0	6.0	9.7	10.4	4.5
14	.8	−12.1	2.5	−1.0	.9	4.6	16.5	−5.7
15	2.6	−3.2	−5.7	1.7	1.5	5.2	7.6	11.2
16	−.2	1.2	−10.5	−10.7	5.4	−.4	12.0	1.5
17	.1	−3.5	−4.5	.7	−2.9	2.8	9.8	−1.8
18	.6	−3.5	2.8	5.8	3.9	.2	3.6	−8.5
19	2.3	−2.3	1.3	2.8	2.9	1.4	10.0	.3
20	−1.4	1.1	−1.7	−4.9	−.8	6.1	3.4	−6.8
21	2.6	3.3	−.9	−.5	.3	2.8	7.8	5.4
22	.3	0	2.0	−1.1	−.5	−1.8	2.4	−2.7
23	−1.4	2.2	−2.1	−2.5	−4.8	−1.9	3.4	−4.1
24	−.8	−.6	−1.3	−.2	−.6	2.8	.3	−5.8
25	−2.9	−.7	−2.3	−2.7	−5.2	−2.0	−5.0	−2.7
Average of farms	3.7	1.7	1.4	2.6	2.6	4.8	9.6	3.6
Maximum	10.5	11.9	9.7	11.0	9.6	14.9	21.9	25.0
Minimum	−2.9	−12.1	−10.5	−10.7	−5.2	−2.0	−5.0	−8.5
Index[1]	100	46	38	70	70	130	259	97

[1] Represents the percentage the returns each year are of the seven-year average (3.7=100).

For the seven-year average shown in Table III only 11 of the 25 farmers made over 5 per cent interest on the farm capital after deducting conservative charges for their own labor and management, and but 3 of these exceeded 8 per cent. Only 1 farmer made better than 5 per cent every year, while 1 failed to make as much as 2 per cent return on the capital in any year.

From Tables II and III and figure 7 it is observed that profits on most farms varied widely from year to year. The uncertainty of the farmers' annual return is partly due to the many conditions over which he has little or no control. Some of the conditions which adversely affected these farms, as well as the Indiana and Wisconsin areas were:

1. Partial crop failures, due to deficient or excessive rainfall; extreme heat or cold; too short growing season; wind or hail storms; plant diseases; insect injuries.

2. Insufficient horse power at critical periods, due to losses of or injuries to work stock.

3. Curtailment of live-stock production, through losses from disease, injury, failure in breeding stock, losses of calves, pigs, or lambs.

4. Lack of sufficient labor at critical periods, due to sickness or accident either to the farmer himself or to members of his family and the difficulty in obtaining hired labor.

FACTORS AFFECTING THE PROFITS OF DIFFERENT FARMS.

While the preceding tables show wide yearly variations in the profits of most farmers, they also show that some farmers made much more money than others over the seven-year period. Some made enough in addition to their living expenses to reduce indebtedness, make improvements, buy more land, or make other investments. Others realized no more than enough to supply the necessaries of life. Table IV shows how each farmer stood with reference to some of the important factors which aided materially in earning larger profits.

TABLE IV.—*The seven-year average labor income, crop area, pasture area, productive animal units, crop yields, live-stock returns and crop acres per man and per horse for each of the 25 farms, Washington County, Ohio, 1912 to 1918.*

Rank of each farm in 7-year average labor income.	7-year average labor income.	Average crop area.	Average acres in pastures.	Average number productive animal units.	Per cent crop yields were of average for all farms.	Per cent live-stock returns per animal were of the average for all farms.	Crop acres per man.	Crop acres per horse.	Per cent of total farm receipts from crops.
1	$824	59	113	32	115	117	30	18	11
2	722	60	83	22	120	128	42	27	15
3	618	58	131	22	102	115	35	14	12
4	616	40	22	11	98	136	28	15	35
5	488	48	78	19	112	119	35	22	12
6	474	47	45	14	117	130	38	17	23
7	462	80	171	33	116	98	35	25	18
8	459	40	57	16	102	100	36	20	12
9	417	36	92	16	111	111	27	18	12
10	386	50	64	10	91	128	36	24	30
11	303	98	173	50	99	77	31	13	8
12	233	40	54	11	96	109	28	14	6
13	224	24	41	9	92	124	19	10	11
14	201	34	16	8	94	98	29	14	13
15	198	24	47	11	97	98	20	10	12
16	137	21	14	5	115	98	17	11	37
17	137	29	59	8	97	75	21	14	25
18	116	38	21	7	86	96	29	12	21
19	113	36	52	8	85	90	29	18	17
20	85	36	84	11	78	74	31	14	23
21	44	46	222	21	85	66	38	23	4
22	− 2	31	53	7	72	68	24	13	8
23	− 8	38	62	13	97	90	30	19	6
24	−161	48	120	10	98	77	36	15	35
25	−178	44	78	10	98	83	31	22	28
Average, all farms	276	44	78	16	100	100	30	17	17
Average, 5 highest	654	53	75	21	109	123	34	19	17
Average, 5 lowest	− 61	41	107	12	90	77	32	18	16

Farm No. 1, with the highest average labor income, had a good-sized business, but not the largest, as measured by crop area and amount of live stock. The crop yields for the seven-year period were 15 per cent above the average of all farms. Most of the crops were fed to live stock, which returned more per head than that of most farms of the region. This farm had about the average number of crop acres per man and per horse. In other words, a comparison of the business of this farm with that of the others shows a much larger business, with better crop yields and higher live-stock returns than the average.

Farm No. 11 had the largest business of all. It had about average crop yields, but the most of the crops were fed to live stock showing low returns per head. Had the live-stock returns from this farm been as much per head as from any of the first six farms, it no doubt would have been at the top in labor income.

Farms 24 and 25 represented the heaviest losers. The size of the business on each of these farms was about the average when measured by crop area, but much below average when measured by amount of live stock. Both farms show poor organization, having large acreages of pasture with only small amounts of live stock. The live-stock return per head was the factor which so adversely affected the profits of each farm. The crop yields were also produced less economically than on most of the other farms.

Another interesting comparison in this table is in regard to the range in crop yields, live-stock returns, crop acres per man and per horse. Comparing the crop yields for the average of the seven-year period, we find only one man producing crops 20 per cent above the average of the region; also there are only two producing below 80 per cent of the average. In the case of live-stock returns we find a wider range; two farms have returns 30 per cent above the average, while two are below 70 per cent of the average. Since both intensity of farming and size of farm have a direct bearing upon crop acres per man and per horse, these should always be kept in mind in a study of the range. The figures do show, however, that in this area both the man and the horse cover small acreages as compared with many other regions but that the variation in acreage covered within the region is marked.

THE INDIANA AREA.

The area in Indiana, which is located about 40 miles north of Indianapolis, is typical of general crop and live-stock farming in north-central Indiana. The land was originally covered with heavy hardwood timber, except for a few strips locally known as "prairie." The surface is level to slightly rolling and much of the land is tiled. The main wagon roads are improved, most of them graveled, and railroad points are readily accessible the year around. General farming prevailed, with corn and hogs the leading sources of income.

THE FARM BUSINESS.

A summary of the farm business for the 100 farms over the seven years, 1910 and 1913 to 1918, is shown in Table V.

TABLE V.—*Summary of the farm business over a period of seven years, 1910 and 1913–1918, Forest and Johnson townships, Clinton County, Ind. (average of 100 farms).*

	1910	1913	1914	1915	1916	1917	1918	7-year average.
Acres per farm	116	124	126	129	130	130	127	126
Acres in pasture	23	27	28	25	28	25	26	26
Acres in corn	37	37	42	43	44	49	41	42
Acres in oats	20	24	25	22	32	27	24	25
Acres in wheat	14	7	11	17	2	2	9	9
Acres in hay	10	17	10	10	12	12	11	12
Acres in other crops	5	6	4	4	3	5	8	5
Corn per acre, bushels	52	55	44	47	48	34	32	45
Oats per acre, do	47	36	38	53	37	36	52	43
Wheat per acre, do	20	20	19	19	6	15	27	18
Hay per acre, tons	1.4	1.5	1.0	1.4	1.4	1.3	1.4	1.3
Productive animal units	18.2	19.2	21.3	21.0	21.1	20.0	20.7	20.2
Brood sows, number	7.0	6.4	7.1	7.3	6.9	6.4	6.2	7
Work stock, do	4.8	4.6	4.8	4.9	4.8	4.8	4.5	4.7
Receipts per animal unit	$61	$63	$59	$59	$83	$116	$128	$81
Total labor, months	18.2	18.8	18.9	19.6	19.4	19.6	19.0	19.1
Farm capital	**$19,055**	**$24,936**	**$25,724**	**$26,436**	**$26,599**	**$27,822**	**$31,135**	**$25,958**
Real estate	16,977	22,672	23,084	23,728	23,888	24,571	27,720	23,234
Live stock	1,355	1,482	1,709	1,677	1,788	2,084	2,294	1,770
Machinery	286	376	397	406	399	433	459	394
All other	437	406	534	625	524	734	662	560
Real estate per acre	147	182	183	183	184	188	218	183
Receipts	**$1,911**	**$2,261**	**$2,158**	**$2,377**	**$3,004**	**$3,412**	**$4,386**	**$2,787**
	Per cent.	*Per cent.*	*Per cent.*	*Per cent*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
Hogs	40	35	40	34	42	53	42	42
Corn	10	15	15	15	20	8	8	13
Oats	12	9	13	15	13	13	14	13
Cattle	8	10	9	9	11	11	13	10
Wheat	11	4	6	12	(1)	1	10	6
Dairy products	2	4	5	4	3	4	4	4
Other	17	23	12	11	11	10	9	12
Expenses	**$624**	**$758**	**$828**	**$868**	**$864**	**$1,169**	**$1,408**	**$931**
	Per cent	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
Hired labor	21	17	18	18	18	15	15	17
Unpaid family labor	8	11	8	9	9	8	8	9
Repairs and depreciation:								
Machinery	8	8	7	7	7	6	6	7
House	4	3	3	3	3	2	2	3
Other buildings	5	4	4	4	4	3	3	3
Repairs, fences	5	5	5	4	5	3	3	4
Feed purchased	11	10	19	15	16	33	25	18
Seed purchased	3	3	2	4	4	3	8	4
Fertilizer	(a)	1	1	1	(a)	(a)	2	1
Machine work hired	6	8	7	6	5	4	6	6
Taxes and insurance	23	22	20	21	22	18	15	20
Other	6	8	6	8	7	5	7	8
Farm Income	**$1,287**	**$1,503**	**$1,330**	**$1,509**	**$2,140**	**$2,243**	**$2,978**	**$1,856**
Interest on capital at 5%	953	1,247	1,286	1,322	1,330	1,391	1,557	1,298
Labor Income	**334**	**256**	**44**	**187**	**810**	**852**	**1,421**	**558**
Operator's labor	312	325	332	338	349	402	527	369
Return on capital, per cent	**5.1**	**4.7**	**3.9**	**4.4**	**6.7**	**6.6**	**7.9**	**5.7**
Value of family labor	48	85	70	78	79	89	120	81
Interest on indebtedness	[b] 47	47	42	49	59	57	55	51
Family income	**1,283**	**1,541**	**1,358**	**1,538**	**2,160**	**2,275**	**3,043**	**1,886**
Family living from farm [1]	**356**	**361**	**368**	**373**	**416**	**551**	**620**	**435**
Amount sold:								
Hogs, number	46	47	59	49	53	45	46	49
Corn, bushels	455	593	482	601	645	274	239	470
Oats, do	718	630	750	984	976	750	979	824
Wheat, do	238	111	178	302	8	24	220	154
Prices:								
Hogs, cwt	8.16	8.25	8.21	7.04	9.45	15.44	17.39	10.56
Corn, bushel	.43	.57	.67	.59	.93	1.03	1.41	.80
Oats, do	.32	.34	.37	.35	.40	.61	.62	.43
Wheat, do	.93	.81	.80	.98	1.40	2.11	2.08	1.30

[a] Less than 1 per cent.
[b] No data, but estimated the same as for 1913.
[1] Computed from U. S. Department of Agriculture Bulletin No. 410 and War Industries Bulletin No. 1.

DISTRIBUTION OF FARM AREA.

The farms averaged 126 acres, with only 6 per cent of the land unimproved. Twenty per cent of the land was in pasture and 74 per cent in crops. Nearly one-half of the crop land was in corn, one-third in small grains, mainly oats, and the remainder in hay.

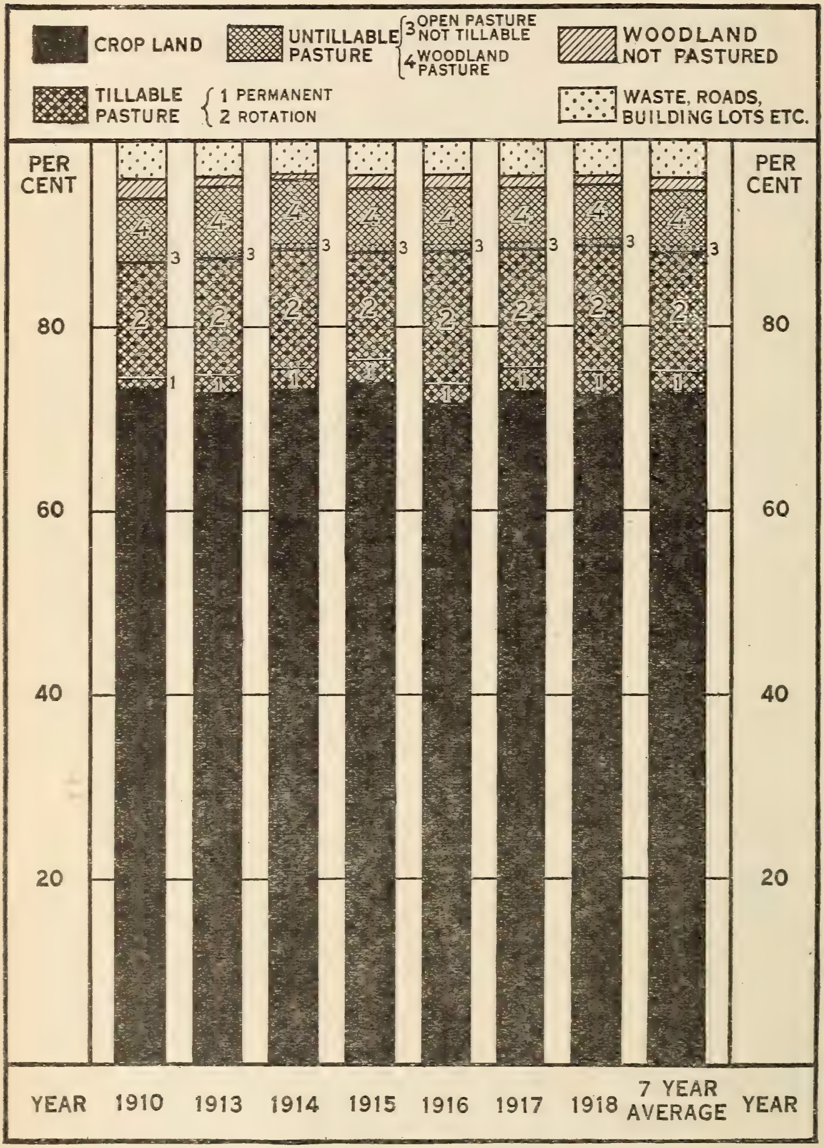

FIG. 8.—Distribution of the farm area on 100 farms, Forest and Johnson townships, Clinton County, Ind. Nearly 90 per cent of the land in this area may be used for tillage purposes. Three-fourths of the land area is devoted to crops under the present organization. A large portion of the pasture area is used in the rotation system.

In figure 8 is shown graphically the average distribution of the farm area for the 100 farms over the seven-year period. The proportion of the farm area devoted to crops remained practically the same over the period. The area of tillable pasture was increased through the improvement of untillable area. Woodland occupies only 1 per cent of the farm area. The acreage taken up by roads, streams, waste,

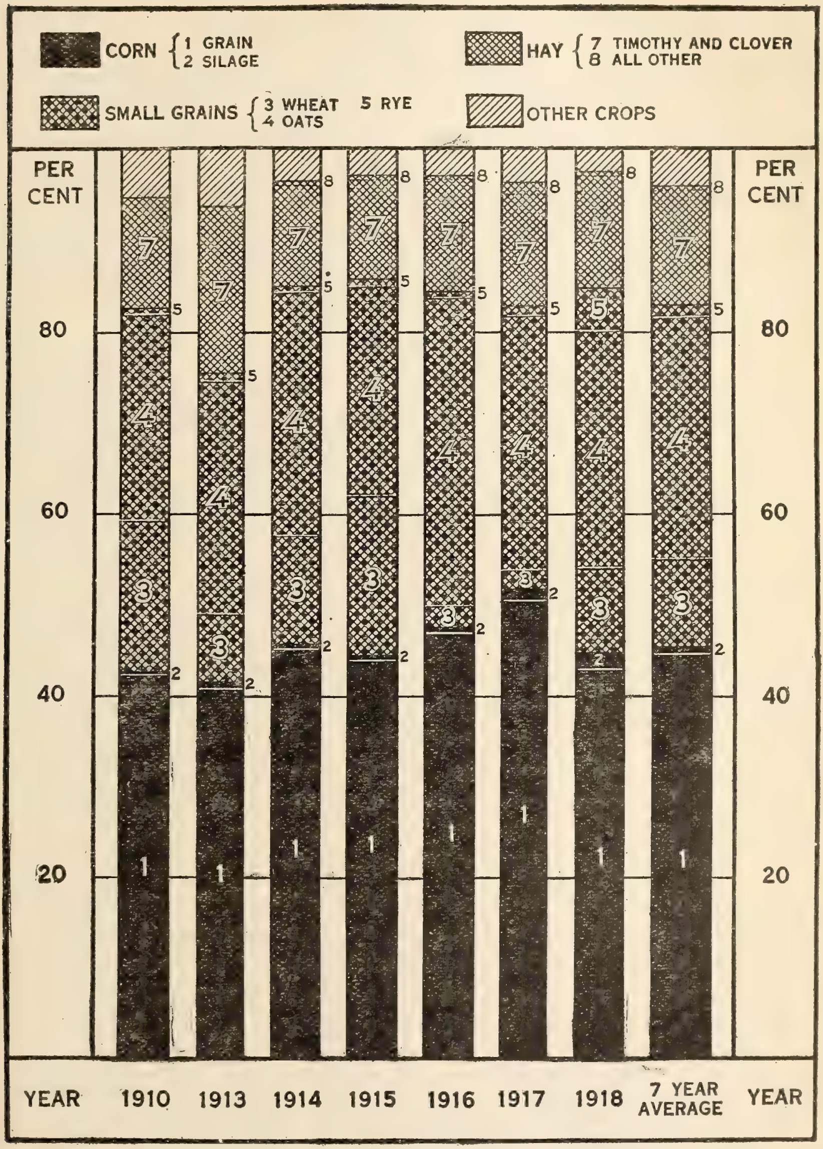

FIG. 9.—Distribution of crop area on 100 farms in Forest and Johnson townships, Clinton County, Ind. A poor yield in 1917, together with the scarcity of labor, caused a decrease in the corn acreage in 1918. The wheat area shows the widest variation over the period. The area of rye was highest in 1918.

building lots, etc., in this area is a very negligible proportion of the farm area.

Figure 9 shows graphically the average distribution of the crop area. Corn and oats occupy the largest acreages, followed by hay and wheat. Comparing the last two years with the first two, the corn acreage was increased 22 per cent and oats 16 per cent, while wheat was decreased 48 per cent and hay 15 per cent. Wheat showed the greatest variation in area. In 1916, when wheat was nearly an entire failure, considerable acreages were plowed in the early spring and put in oats, thereby making the acreage devoted to oats highest in that year. Because of the unprofitable results in 1916, only a small area was put out the following year and an average of only 9 acres per farm in 1918, when the yield was highest.

CROP YIELDS.

The seven-year average yield of corn was 45 bushels per acre. The lowest average of any year was 32 bushels and the highest 55 bushels. The two discouraging corn years were 1917 and 1918, and the effects of these were reflected in purchased feeds for these years (shown in Table V and figure 11). The average yield of oats was 43 bushels per acre, the lowest being 36 bushels and the highest 53 bushels. The average yield of wheat was 18 bushels per acre, with a range of from 6 to 27 bushels. The acreage in wheat varied widely over the period, with a marked decrease during the later years. The average yield of hay was 1.3 tons per acre, the lowest 1 ton and the highest 1.5 tons. Oats and hay showed the least variation in yield per acre over the seven-year period and wheat the greatest. Twenty-six per cent of the corn, 79 per cent of the oats, 88 per cent of the wheat, and 26 per cent of the hay produced on these farms were sold as cash crops.

AMOUNT OF LIVE STOCK KEPT.

The number of productive animal units per farm (expressed as the equivalent of mature cattle) averaged 20.2, not counting work horses. This is an average of one head to each 5.9 acres of crops and pasture. When measured by the amount of feed required, hogs represented over one-half of the live stock and cattle about one-third. Brood sows kept averaged 7 per farm, and the number of hogs sold per farm was 49, or 7 per brood sow. In addition about 4 hogs were slaughtered per farm for home use, so that the average production was 11 pigs per sow. Work horses averaged 4.7 per farm. Only a small number of cattle were raised, and only a few farms bought feeding cattle. Most of the farms produced a small amount of dairy products for sale. The proportion of the various classes of live stock showed only slight variation over the period. The small increase was in cattle.

LABOR REQUIRED.

An average of 19.1 months of man labor per year was used in the operations of these farms. Twelve months of this was the farmer's own labor and management, 2.8 months unpaid family labor, and 4.3 months hired labor. Thus 77 per cent of the labor in operating these farms was performed by the farm operator and members of his family and 23 per cent was hired.

FARM CAPITAL.

There was a decided increase in the capital value of these farms from 1910 to 1918. Between the period 1910 and 1913 there was a considerable increase in land values. From 1913 to 1917 the increase hardly offset the value of additional improvements put on the farms, but in 1918 there was another marked increase. There were slight increases in the average size of farm and in the amounts and values of live stock and of machinery. The farm capital for the seven-year average was $25,958 per farm. Of this capital $23,234, or 90 per cent, was in real estate; $1,770, or 7 per cent, in live stock; $394, or 1 per cent, in machinery; and $560, or 2 per cent, in supplies and operating cash. The value of land, exclusive of buildings, averaged $21,309 per farm, or 82 per cent of the total farm capital.

RECEIPTS.

While the farm receipts increased from $1,911 per farm in 1910 to $4,386 in 1918, the distribution of the more important items of receipts over the seven-year period shows no marked change in the farm organization in this area. Hogs were the leading source of income, with corn and oats second. The income from wheat varied most, but wheat represented only 6 per cent of the total receipts. Even with the low yields of corn in 1917 and 1918, a number of these farmers maintained the production of hogs by buying more feed than usual, and the higher price of hogs increased their incomes.

Figure 10 shows graphically the average distribution of receipts over the seven-year period. Over the later years of the study the proportion of the receipts from live stock increased and that from crops decreased. This was due in part to the poor yields of the last two years. Comparing the first three years with the last three, the proportion of the total income represented by live stock increased 12 per cent. Corn, in addition to supplying the farm needs, contributed considerable income as a cash crop during most of the years.

EXPENSES.

The distribution of farm expenses is shown in Table V. For the seven-year period these averaged $931 per farm, or 33 per cent of the total receipts. These expenses include $81 for the value of labor performed by the farm family. The expenses were lowest in 1910 ($624), but for the years 1913, 1914, 1915, and 1916 there were only slight variations either in amount or proportions. Beginning with the year 1917 the expenses increased rapidly. The items of largest expense were hired labor, repairs and depreciation on machinery and buildings, taxes and insurance, and feed.

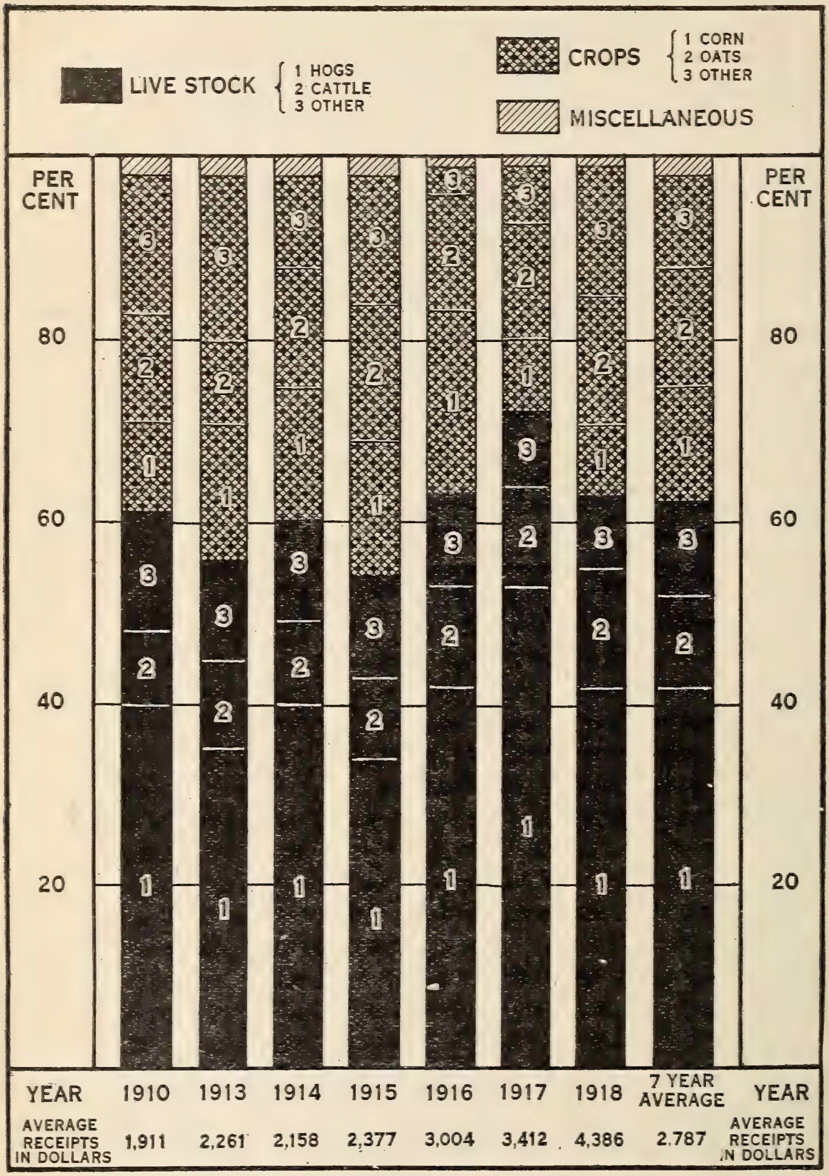

Fig. 10.—Distribution of receipts on 100 farms in Forest and Johnson townships, Clinton County, Ind. Hogs are the most important live-stock source of receipts, and corn and oats the leading source of crop receipts. The receipts from wheat varied widely.

In figure 11 the proportion that each of the more important classes of expense represents of the total expense is shown for each year and as an average for the seven years. For the first two years family labor and hired labor represented 29 per cent of the total, while for the last two years it represented 23 per cent of the

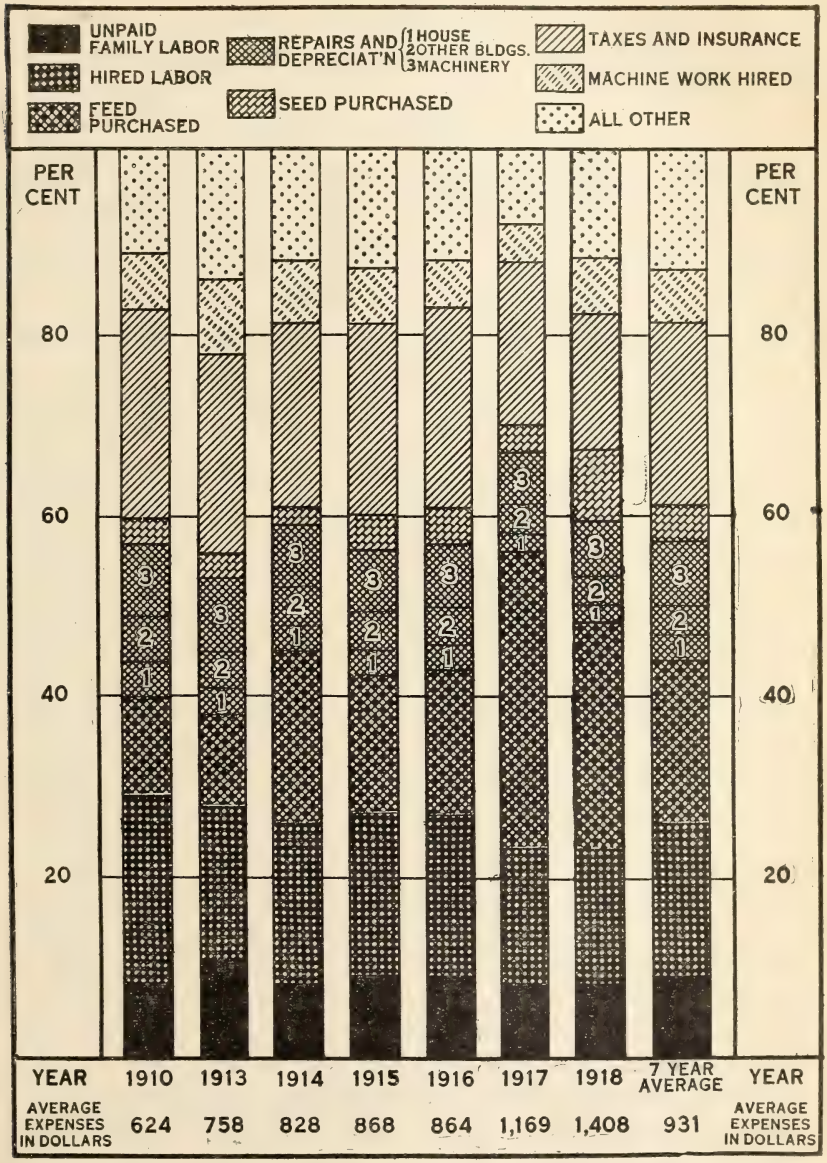

Fig. 11.—Distribution of expenses on 100 farms in Forest and Johnson townships, Clinton County, Ind. The low yield of corn for the years 1917 and 1918 (see Table V) made necessary the purchase of a large amount of feed.

total expense. Purchased feeds showed the largest percentage in 1917 and 1918, during which years the proportional expense for hired labor fell off sharply. The expenses for the seven-year average were about one-third of the receipts. When the value of the farmer's labor and 5 per cent interest on the capital are included the total costs equal 93 per cent of the income.

FARM EARNINGS.

The farm income, or the receipts less the expenses, averaged $1,856 per farm for the seven-year period. It was highest in 1918, when it reached almost $3,000, and lowest in 1910, when it was slightly less than $1,300. Comparing the first two years with the last two, the data show that receipts increased 87 per cent and expenses 86 per cent. The seven-year average labor income of the farms in this area was $558, ranging from $44 in 1914 to $1, 421 in 1918. The return on the farm capital averaged 5.7 per cent, being as low as 3.9 per cent in 1914 and as high as 7.9 per cent in 1918.

The farm earnings, whether expressed as labor income or as per cent return on capital, were low during the four years of low-price levels, but showed a marked increase during the last three years, when prices were higher. The average labor income of the 100 farms for the four years 1910 and 1913–1915 was $205; for the three years 1916–1918 it was $1,028. The return on capital for the earlier period averaged 4½ per cent and for the latter period 7 per cent.

The family income, which represents the amount of money available to the family after deducting from the total receipts the farm expenses, including interest paid upon indebtedness but exclusive of the value of family labor or the farmer's own labor, averaged $1,886 per farm for the seven-year period, ranging from $1,288 in 1910 to $3,043 in 1918. About one-third of these farms had indebtedness varying from $200 to $12,000 per farm.

Figure 12 shows graphically the distribution of the average gross income on these farms for each year and for the seven-year period. This chart shows how much of the gross income is represented by operating expenses, interest on capital, unpaid family labor, and food products, fuel, and house rent furnished by the farm. Receipts increased materially during the latter part of the period of study, and though expenses also increased the spread between the two became wider, so that the amount left for the farmer's own wages (labor income) grew larger toward the close of the period.

Owing to the capital value of farms in this area being more than in the other areas studied, the item of interest for the seven-year period averaged $1,298 per farm. Because of the size of this item, the available income on many of these farms, if free from debt, may be fairly large, owing to the fact that the interest for the use of capital does not have to be paid out. On many farms where the capital represented in the business is rather large and where the operations are carried on without a large cash outlay, the interest may be of sufficient amount to make the business apparently prosperous even though the farmer's labor income is low.

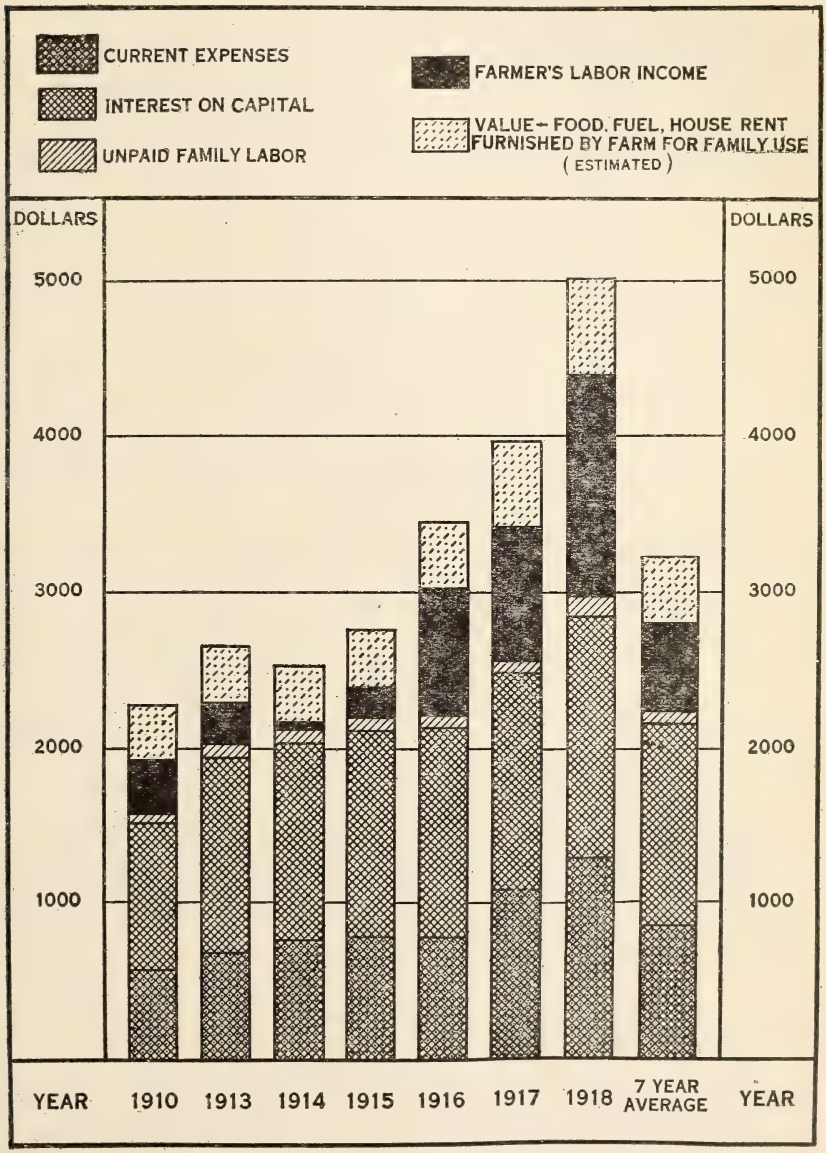

Fig. 12.—Distribution of the gross income on 100 farms in Forest and Johnson townships, Clinton County, Ind. The farmer has money invested and is entitled to a gross income of sufficient size to pay interest upon investment as well as pay for his own labor and supervision. The interest upon investment may enable a farmer to have a considerable income to spend, if free from debt, even though his own wages (labor income) may be very small. For the years 1916, 1917, and 1918 the gross income increased more than expenses, thus giving the farmers a better labor income than in previous years.

FAMILY LIVING FROM FARM.

In addition to the average labor income of $558 made by the farmers in this area, they had the use of products from the farm for family use, in the way of food, fuel, and house rent, estimated to be

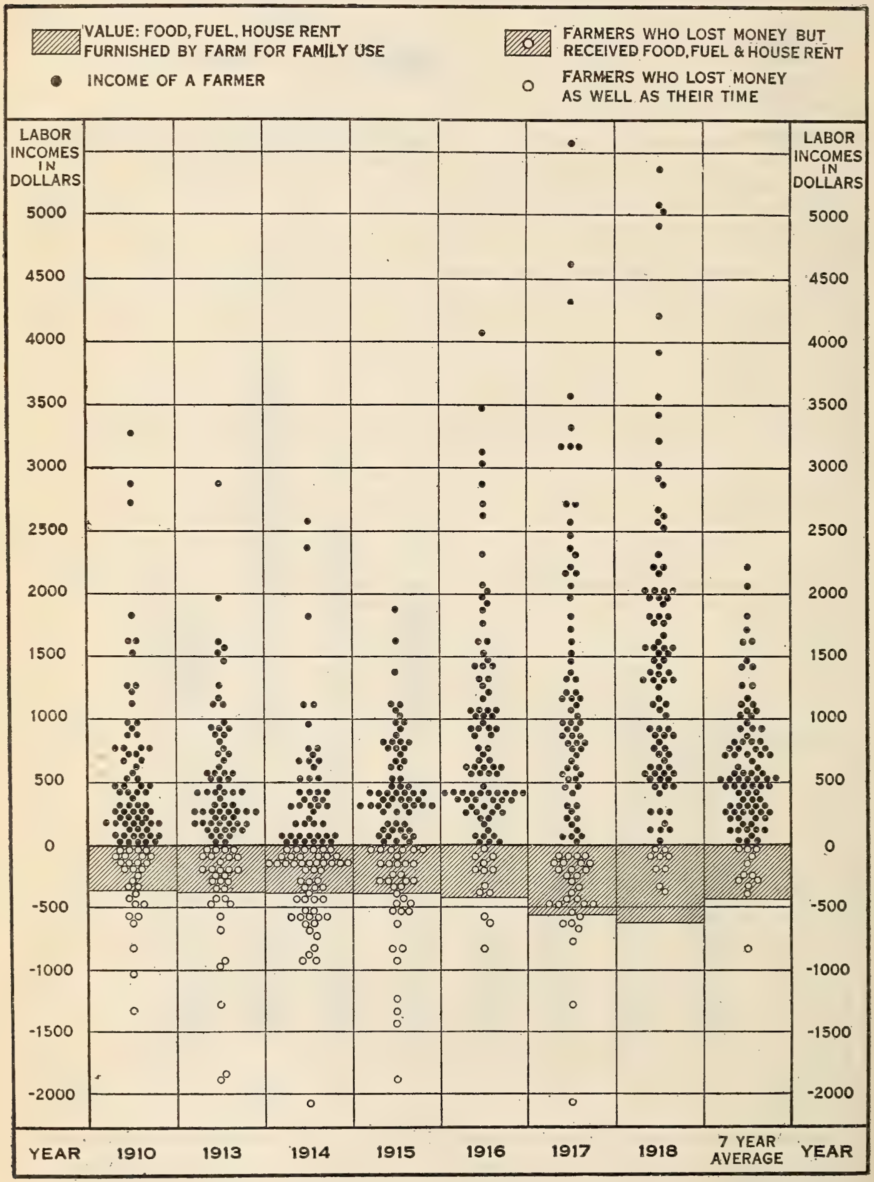

FIG. 13.—The labor incomes of 100 farmers in Forest and Johnson townships, Clinton County, Ind., 1910 and 1913–1918. Each dot represents the labor income of one farmer. The farmers represented in the shaded area of the chart had only the food products, fuel, and house rent for their year's labor, and less than 5 per cent interest upon investment. The white dots below the shaded area represent farmers whose losses were in excess of the average value of supplies furnished by the farm for family use.

worth $435. The value of these items increased from $356 in 1910 to $620 in 1918.

PRODUCTS SOLD AND PRICES RECEIVED.

It was not possible to measure quantitatively all the various products sold from these farms, but Table V shows the amounts of the more important sources of income. The number of hogs sold for the seven-year period averaged 49 head, corn 470 bushels, oats 827 bushels and wheat 154 bushels. The most hogs were sold in 1914, the most corn in 1916, the most oats in 1915, and the most wheat in 1915. Hogs and oats showed the least variation and wheat the most.

In 1910, 1913, and 1914, the average price received for hogs was $8.16, $8.25, and $8.21 per hundredweight. In 1915 the price fell to $7.04, but beginning with 1916 the price made a decided advance to the year 1918, when the price averaged $17.39 per hundredweight. Oats showed little advance in 1918 over 1917 and wheat decreased in price slightly. Corn showed the greatest advance in price and wheat and oats the least.

LABOR INCOME AND RETURN ON CAPITAL OF THE 100 INDIANA FARMERS OVER THE SEVEN-YEAR PERIOD.

The labor income and the per cent return on capital for each of the 100 farms are shown for each year and for the average of the seven years in Tables VI and VII. The farms are arranged in order of the seven-year average labor income. The labor incomes are also shown graphically in figure 13.

It will be seen from Table VI that 14 of the 100 had a labor income every year, 32 for six of the seven years, 21 for five of the seven years, 17 for four of the seven years, 6 for three of the seven years, 7 for two of the years, and 3 for only one year.

No one farmer reached the $1,000 labor income mark every year of the period, but several farmers reached $1,000 some of the years. One farmer got over $1,000 labor income six of the seven years, and one-fourth of them about half of the years. Some farmers went above the $1,000 mark for occasional years. Four farmers made over $5,000 for one of the seven years.

Only one of the 100 farmers reached a $3,000 labor income prior to 1916, and he for but one year. Eleven farmers reached $1,000 labor income in 1910, 10 in 1913, 5 in 1914, 7 in 1915, 33 in 1916, 34 in 1917, and 57 in 1918. No one farmer reached $4,000 until 1916, nor $5,000 until 1917. In 1918 three farmers reached the $5,000 mark and two others reached the $4,000 mark.

The seven-year average labor income of 18 farmers exceeded $1,000; that of two of these exceeded $2,000; that of 32 ranged from $500 to $1,000; while that of the other 50 was less than $500. Twelve

Table VI.—*Labor incomes of 100 farms in Forest and Johnson townships, Clinton County, Ind., 1910 and 1913–1918.*

(Ranked according to size of the seven-year average labor income.)

Rank of farm.	7-year average.	1910	1913	1914	1915	1916	1917	1918
1	$2,210	$1,252	$510	$2,383	$1,851	$2,042	$2,348	$5,082
2	2,071	58	569	694	833	2,634	4,324	5,385
3	1,812	686	−343	−408	543	4,104	3,190	4,915
4	1,704	−583	1,547	160	803	2,867	4,602	2,535
5	1,620	256	1,965	−906	762	3,117	3,558	2,590
6	1,606	2,878	−486	785	479	14	5,560	2,012
7	1,454	687	−165	778	1,070	3,036	3,188	1,584
8	1,425	3,256	−58	325	−1,316	2,099	2,091	3,581
9	1,407	1,211	−296	260	17	431	3,198	5,029
10	1,280	1,618	2,884	−318	−826	3,450	−1,294	3,446
11	1,273	499	1,588	424	180	1,922	2,472	1,828
12	1,197	−1,058	550	1,833	−387	2,706	2,700	2,034
13	1,149	−348	724	539	657	1,449	812	4,209
14	1,121	1,251	330	−123	808	1,506	2,246	1,829
15	1,081	1,832	920	655	292	1,271	−632	3,227
16	1,071	2,702	−1,276	2,578	1,648	−311	−503	2,662
17	1,045	480	1,637	1,139	966	423	2,173	499
18	1,009	980	1,169	−18	1,149	2,308	−190	1,665
19	972	768	1,472	−54	−48	1,777	881	2,010
20	940	300	4	−122	824	1,865	1,730	1,980
21	901	739	921	316	1,146	1,099	1,620	463
22	901	−830	−20	1,109	949	610	1,549	2,942
23	868	1,531	1,282	−277	962	1,403	1,228	−51
24	843	456	451	644	795	1,072	1,160	1,324
25	840	994	−423	68	−204	1,470	966	3,006
26	820	724	101	6	263	1,336	1,800	1,507
27	816	773	151	−170	356	628	1,995	1,982
28	796	322	1,104	672	−122	904	886	1,805
29	793	440	759	−543	413	1,226	1,249	2,010
30	789	170	254	−148	432	1,005	2,367	1,442
31	767	328	640	354	87	579	1,081	2,303
32	748	−358	−261	27	−3	911	3,342	1,577
33	720	282	528	532	−12	937	1,468	1,306
34	710	−15	−190	−126	−823	942	2,552	2,627
35	704	−78	586	−443	683	1,649	305	2,226
36	700	53	417	399	−15	1,069	803	2,173
37	656	252	294	−668	543	1,403	990	1,778
38	647	109	672	358	751	1,616	766	258
39	640	225	550	332	368	1,169	501	1,332
40	596	919	291	−89	387	655	1,108	904
41	591	512	147	−273	84	1,971	991	708
42	564	897	898	9	1,024	790	−775	1,105
43	554	166	90	−383	317	576	904	2,209
44	549	336	1,104	345	858	434	126	643
45	535	−79	−17	−446	176	404	823	2,882
46	535	421	942	974	17	−89	−466	1,947
47	532	152	−684	−617	1,365	997	1,321	1,187
48	527	−129	291	−133	303	868	870	1,620
49	527	243	39	−339	405	647	1,161	1,534
50	502	−598	194	−900	473	−176	591	3,933
51	491	193	447	193	328	−61	569	1,767
52	481	61	149	437	643	616	−96	1,558
53	473	−255	859	−27	442	431	406	1,458
54	467	−60	112	−135	484	1,034	−137	1,974
55	458	54	849	349	626	655	−275	947
56	457	200	407	51	352	1,021	642	524
57	446	491	−151	−54	−70	1,319	738	852
58	440	22	978	−869	−123	−566	2,184	1,452
59	400	−82	279	164	296	267	521	1,354
60	369	17	246	522	738	365	−100	798
61	368	23	446	66	446	18	1,167	408
62	359	756	287	23	−326	341	752	681
63	340	197	436	−121	128	306	934	498
64	338	222	−77	−580	116	−198	1,322	1,557
65	330	116	548	419	12	408	217	588

TABLE VI.—*Labor incomes of 100 farms in Forest and Johnson townships, Clinton County, Ind., 1910 and 1913–1918*—Continued.

Rank of farm.	7-year average.	1910	1913	1914	1915	1916	1917	1918
66	$312	$622	$176	$744	−$261	−$626	$628	$898
67	310	520	262	−103	−308	153	250	1,397
68	281	50	404	81	449	−4	−413	1,398
69	274	1,641	173	−337	−646	34	50	1,003
70	265	−24	−62	11	139	798	92	903
71	258	183	330	−152	−409	64	678	1,109
72	255	−303	−177	−552	349	439	1,399	631
73	253	583	−30	−106	62	279	−102	1,086
74	249	893	−23	−47	−47	374	−692	1,282
75	218	404	103	89	384	434	−57	167
76	213	166	389	210	307	375	−224	269
77	207	126	198	−54	306	375	−69	568
78	166	1,133	57	−39	−946	−847	1,000	806
79	154	−108	207	48	322	1,092	−454	−27
80	143	387	160	185	188	433	−461	112
81	137	97	284	−98	66	272	319	20
82	135	−158	−342	98	−25	403	194	772
83	132	406	323	71	−497	355	−303	572
84	116	−123	172	−19	336	311	459	−326
85	65	−186	61	−125	−146	571	−611	888
86	28	−118	−129	401	−114	−178	−211	545
87	10	266	−167	−588	−466	146	234	646
88	4	254	−64	−403	120	207	92	−178
89	−7	46	−927	−67	−295	363	−470	1,300
90	−20	−636	707	−591	−292	487	457	−272
91	−26	−43	−217	−24	−130	259	41	−70
92	−67	−176	−469	−167	−509	898	−586	539
93	−132	−451	−248	−134	−286	237	−168	128
94	−224	13	−266	−560	−533	−127	−62	−30
95	−244	−223	245	−633	434	716	−2,067	−181
96	−262	−1,341	−1,864	−514	−1,213	−373	2,743	729
97	−270	−487	−585	−814	−200	80	−441	555
98	−312	−17	−429	−748	−511	66	−179	−369
99	−387	777	−999	−272	−1,859	−374	−102	123
100	−802	−421	−1,820	−2,065	−1,410	559	−368	−88
Average	558	334	256	44	187	810	852	1,421
Maximum	2,210	3,256	2,884	2,578	1,851	4,104	5,530	5,385
Minimum	−802	−1,341	−1,864	−2,065	−1,859	−847	−2,067	−369
Index[1]	100	60	46	8	34	145	153	225

[1] Represents the percentage the labor income each year is of the 7-year average ($558.=100).

of the latter realized no labor income outside of the farm supplies furnished the family, and received less than 5 per cent interest on the capital.

Thirty-two per cent of these farmers realized in labor income every year as much or more than they valued their labor to be worth in addition to the farm-furnished supplies, and 41 per cent about half of the years.

In 1910, 41 of these 100 farmers made in labor income what they considered their labor worth in addition to food, fuel, and house rent; 39 in 1913; 25 in 1914; 43 in 1915; 73 in 1916; 56 in 1917; and 81 in 1918.

From Table VII it will be noted that 60 of the 100 farmers made over 5 per cent interest on capital, after deducting conservative charges for their own labor and management, and that but 10 of these received over 8 per cent. Only 2 farmers made better than 5 per cent every year.

TABLE VII.—*Per cent return on capital on 100 farms in Forest and Johnson townships, Clinton County, Ind., 1910 and 1913–1918.*

(Ranked according to size of 7-year average labor income.)

Rank.	7-year average.	1910	1913	1914	1915	1916	1917	1918
1	8.0	6.8	4.8	8.9	7.7	8.1	7.6	11.8
2	7.6	3.9	5.4	5.7	5.6	9.6	12.6	10.3
3	6.1	5.2	4.2	4.2	5.0	8.5	7.6	8.1
4	8.8	2.2	8.0	4.7	6.4	12.7	17.1	10.6
5	6.7	4.6	7.8	2.9	5.6	9.3	9.6	7.4
6	7.3	11.9	3.8	5.5	5.1	4.6	12.8	7.4
7	8.1	6.5	1.9	6.2	7.0	12.1	14.7	8.6
8	6.6	11.2	4.4	5.1	1.5	7.8	7.6	9.0
9	8.2	11.6	1.3	4.8	3.6	3.6	14.1	18.4
10	6.7	8.4	9.3	3.8	3.3	9.2	2.6	10.4
11	8.6	5.8	10.1	5.3	4.3	11.8	13.9	9.4
12	5.7	1.7	4.9	6.9	4.0	8.0	7.9	6.6
13	6.1	1.8	5.8	4.8	5.2	7.2	5.2	13.0
14	8.1	9.4	5.1	3.3	7.1	9.9	12.6	9.4
15	7.1	10.2	6.6	5.7	4.3	7.4	1.7	13.7
16	5.9	9.0	3.0	7.6	6.4	4.1	3.9	7.4
17	8.3	6.3	11.2	8.8	7.3	5.3	14.0	5.4
18	6.6	7.9	7.1	4.0	6.9	9.6	3.1	7.4
19	7.8	7.8	11.5	2.2	2.3	10.3	6.3	13.9
20	6.3	5.1	4.1	3.6	7.0	9.4	8.5	6.8
21	8.2	6.9	8.3	4.8	8.8	10.2	13.4	4.9
22	7.0	.1	3.6	8.5	7.7	6.3	9.4	13.5
23	6.2	8.6	6.9	3.7	6.2	7.1	6.5	4.1
24	9.9	10.7	9.9	11.6	8.0	9.7	10.1	9.4
25	7.1	8.9	1.6	3.7	2.9	9.8	7.5	15.2
26	7.3	8.1	3.6	3.2	4.5	10.2	12.0	9.7
27	6.5	6.9	4.5	3.4	5.0	6.4	11.0	8.2
28	8.2	5.3	8.8	7.8	.1	10.3	10.0	15.3
29	6.3	5.5	6.4	1.7	5.2	8.1	8.0	9.5
30	7.4	3.1	4.6	2.0	5.4	9.2	17.6	10.1
31	6.4	4.8	6.3	4.4	2.6	5.8	8.3	12.4
32	5.9	2.2	3.1	4.6	3.9	6.5	13.3	7.4
33	8.1	4.9	7.0	7.0	2.4	10.3	13.9	11.1
34	5.4	3.2	2.7	3.0	.3	6.9	11.9	10.0
35	5.9	2.6	6.2	1.0	7.0	9.4	5.0	9.7
36	5.4	2.0	5.4	5.1	3.3	7.3	6.4	8.6
37	6.2	4.7	5.0	−1.2	6.1	11.2	7.6	10.2
38	6.8	3.7	6.8	5.0	7.2	11.9	8.5	4.8
39	7.4	5.4	7.4	4.8	4.3	12.7	5.6	11.8
40	6.2	7.7	5.0	3.5	5.3	6.5	8.2	7.3
41	5.7	6.8	4.3	2.6	4.0	9.4	6.9	6.0
42	5.6	7.3	7.4	3.3	8.0	8.1	−2.4	7.8
43	5.9	4.6	4.1	.8	4.8	6.0	7.7	13.0
44	6.9	6.2	11.2	5.3	8.8	5.9	3.9	7.2
45	5.6	2.2	3.4	1.1	4.4	5.5	7.6	15.2
46	5.8	6.4	7.3	7.5	4.0	3.7	3.1	8.6
47	5.5	4.0	2.7	2.0	9.0	7.7	7.4	5.4
48	6.5	2.3	5.0	3.0	5.0	8.9	8.7	12.5
49	5.1	4.6	3.9	2.9	5.1	5.7	7.0	6.3
50	4.8	2.2	4.6	1.9	5.2	3.7	4.7	11.4
51	5.8	4.8	8.1	4.2	5.1	3.2	5.8	9.6
52	6.0	2.5	4.5	6.4	7.9	8.2	1.6	10.7
53	5.2	.2	8.0	3.3	5.5	5.7	4.6	9.4
54	5.0	.7	4.0	.3	7.0	9.8	2.8	10.7
55	6.0	4.0	8.8	5.3	6.9	7.1	.5	9.4
56	5.4	4.5	5.3	3.7	5.0	8.6	5.9	5.2
57	6.2	6.2	2.2	2.8	2.0	13.7	9.2	7.5
58	5.3	3.6	6.8	1.7	3.8	2.7	10.3	8.0
59	4.8	3.0	4.6	4.1	4.4	4.1	4.6	8.8
60	4.9	3.7	4.7	6.0	6.8	5.1	3.0	5.0
61	5.0	.5	8.8	1.0	7.6	2.3	9.9	5.1
62	5.0	7.8	4.7	3.6	1.4	4.9	6.8	6.1
63	5.2	4.6	5.9	2.2	3.9	5.0	9.8	5.3
64	4.3	4.0	2.5	.6	4.1	2.8	8.5	7.5
65	4.9	3.7	6.9	5.7	3.5	5.1	4.2	5.0

TABLE VII.—*Per cent return on capital on 100 farms in Forest and Johnson townships, Clinton County, Ind., 1910 and 1913–1918*—Continued.

Rank.	7-year average.	1910	1913	1914	1915	1916	1917	1918
66	5.1	7.9	4.0	7.3	2.9	– .1	6.8	7.4
67	4.7	5.9	4.3	2.2	1.7	4.5	4.9	9.5
68	4.4	2.5	4.4	2.2	6.5	3.3	2.6	9.1
69	4.8	13.5	4.0	1.5	.1	2.9	2.5	7.9
70	5.3	2.4	1.6	2.3	4.1	12.6	1.4	12.5
71	4.2	3.8	5.1	3.0	.4	3.1	6.6	7.2
72	4.4	2.4	3.0	1.6	5.0	5.3	8.3	5.5
73	5.2	5.9	3.5	3.2	3.9	4.7	3.1	12.0
74	5.0	10.0	3.1	3.4	3.4	5.3	.7	8.8
75	4.3	5.2	4.0	4.0	5.1	5.3	3.4	3.2
76	4.4	4.1	7.4	5.1	6.4	7.2	–2.0	2.8
77	4.7	4.1	4.7	1.5	6.1	6.9	1.5	8.2
78	4.5	8.5	4.2	4.0	1.3	1.5	6.6	5.6
79	2.7	–7.0	5.1	3.0	7.9	11.9	–1.4	– .6
80	2.7	4.0	2.0	3.5	3.5	6.7	–3.2	2.7
81	4.0	2.9	6.5	– .8	1.5	6.9	9.4	1.8
82	3.1	.9	– .9	3.0	2.1	5.9	4.1	6.6
83	3.8	7.1	5.8	3.8	–2.2	5.4	.7	6.3
84	3.4	1.7	4.2	3.1	5.2	5.1	4.9	– .4
85	4.4	3.4	4.4	3.7	3.6	5.8	2.3	7.8
86	2.6	1.1	1.7	6.5	2.8	1.0	– .2	5.3
87	3.3	5.2	2.0	– .8	.3	4.4	5.0	7.3
88	3.0	4.7	2.7	.7	3.9	4.3	3.2	1.6
89	3.1	3.5	–1.5	3.0	1.8	5.3	1.5	8.0
90	3.0	.5	6.1	1.7	2.5	6.2	4.6	– .4
91	1.4	2.2	1.9	.7	– .3	4.0	1.6	– .1
92	2.4	2.1	.1	2.1	.4	7.4	– .8	5.2
93	3.2	1.5	2.6	3.2	2.6	4.7	3.2	4.4
94	(*a*)	2.7	– .5	–3.3	–3.1	.8	1.5	2.0
95	2.6	.9	5.0	.8	5.7	6.4	–2.1	1.3
96	4.1	2.2	2.0	3.8	3.1	4.1	8.1	5.4
97	1.8	– .0	.4	– .8	2.5	3.6	1.2	5.4
98	– .2	3.1	– .3	–4.0	–1.9	3.4	.2	–1.6
99	2.7	6.2	.9	3.0	–1.4	2.8	3.6	4.0
100	2.4	2.9	.2	.2	1.3	5.4	3.3	3.6
Average of farms	5.4	4.9	4.8	3.5	4.2	6.7	6.2	7.7
Maximum	9.9	13.5	11.5	11.6	9.0	13.7	17.6	18.4
Minimum	– .2	–7.0	–1.5	–4.0	–3.1	– .1	–3.2	–1.6
Index [1]	100	91	89	65	78	124	115	143

[a] Less than one-tenth of 1 per cent.

[1] Represents the percentage the returns each year are of the seven-year average (5.4=100).

FACTORS AFFECTING THE PROFITS OF DIFFERENT FARMS.

Table VIII shows, for each farm, the seven-year average crop area, number of productive animal units, crop yields, live-stock returns per animal, and crop acres per man and per horse, all of which are considered important factors affecting farm profits. The farms are arranged in the table according to the seven-year average labor incomes. A study of this table will show how each farm stood with reference to each of these factors. (An illustration of such study was given for the area in Ohio on p. 22.)

Also certain groups of farms may be studied with reference to these factors, as shown in the lower part of the table. The 10 farms having the highest seven-year average labor incomes averaged 195 acres of crops, as compared with 86 acres for the 10 farms having the lowest seven-year average labor incomes. The highest-labor-income farms had 45 productive animal units per farm, as against 18 for the lowest-labor-income farms. The crop yields of the former farms were 6 per cent above the average of all farms, while those of the latter were 12 per cent below the average. The live-stock returns per animal for the farms with the highest labor incomes were 19 per cent above the average, while those for the farms with lowest labor incomes were 23 per cent below the average. The former group of farms worked 23 crop acres more per man and 7 crop acres more per horse than the latter group. The 10 farms with highest labor incomes averaged $1,659 per farm; but the farms with lowest labor incomes lacked $273 of paying 5 per cent interest on the capital, thus leaving nothing for the farmer's own labor save the food products, fuel, and house rent furnished by the farm.

TABLE VIII.—*The 7-year-average labor income, crop area, pasture area, productive animal units, crop yields, live-stock returns, and crop acres per man and per horse for each of the 100 farms, Clinton County, Ind., 1910 and 1913–1918.*

Rank of each farm in 7-year average labor income.	Average labor income.	Average crop area.	Average acres in pasture.	Average number productive animal units.	Per cent crop yields were of average for all farms.	Per cent live-stock returns per animal were of the average for all farms.	Crop acres per man.	Crop acres per horse.	Per cent of total farm receipts from crops.
1	$2,210	216	19	31	109	118	92	25	48
2	2,071	182	49	43	99	114	84	26	34
3	1,812	344	93	78	112	131	96	30	29
4	1,704	112	53	52	111	110	47	15	17
5	1,620	204	44	52	112	121	72	26	27
6	1,606	249	58	42	104	121	85	44	43
7	1,454	118	30	31	101	111	91	23	24
8	1,425	195	48	66	98	125	56	24	16
9	1,407	84	22	21	118	131	50	17	32
10	1,280	248	28	35	99	106	73	27	49
11	1,273	87	12	15	117	122	55	19	53
12	1,197	234	70	44	101	85	73	20	54
13	1,149	125	44	28	105	126	54	23	30
14	1,121	80	38	31	100	130	58	15	9
15	1,081	109	29	39	101	114	54	20	22
16	1,071	277	53	26	107	104	96	28	69
17	1,045	90	31	26	103	104	71	23	35
18	1,009	121	31	36	102	114	73	23	19
19	972	68	15	18	101	118	60	21	37
20	940	130	27	23	97	104	76	25	41
21	901	75	24	22	115	102	53	22	27
22	901	85	27	22	110	94	65	27	37
23	868	149	53	49	98	122	59	23	17
24	843	64	7	7	100	83	49	18	64
25	840	99	20	20	107	102	65	23	32
26	820	39	19	24	113	140	37	12	4
27	816	118	22	19	95	99	88	19	45
28	796	63	10	8	91	95	54	24	52
29	793	86	49	33	107	137	42	14	9
30	789	58	16	11	118	91	50	22	57
31	767	63	17	18	107	111	54	21	19
32	748	164	37	19	99	85	75	22	57
33	720	47	22	15	108	116	42	16	21
34	710	97	37	29	110	111	45	18	12
35	704	97	24	17	92	110	71	18	39
36	700	87	21	23	109	88	50	22	34
37	656	54	19	23	114	112	40	16	8
38	647	48	15	15	108	141	41	14	21
39	640	37	9	11	93	109	34	13	25
40	596	85	20	20	117	107	49	15	37

Table VIII.—*The 7-year-average labor income, crop area, pasture area, productive animal units, crop yields, live-stock returns, and crop acres per man and per horse for each of the 100 farms, Clinton County, Ind., 1910 and 1913–1918*—Continued.

Rank of each farm in 7-year average labor income.	Average labor income.	Average crop area.	Average acres in pasture.	Average number productive animal units.	Per cent crop yields were of average for all farms.	Per cent live-stock returns per animal were of the average for all farms.	Crop acres per man.	Crop acres per horse.	Per cent of total farm receipts from crops.
41	$591	123	13	13	92	85	87	24	61
42	564	82	15	15	91	108	68	27	37
43	554	61	27	23	90	84	46	16	19
44	549	43	13	18	113	121	30	16	6
45	535	69	18	14	85	116	59	22	42
46	535	96	34	32	92	115	53	20	16
47	532	133	10	13	106	133	96	25	53
48	527	60	19	6	116	120	53	35	65
49	527	105	35	30	111	91	46	17	22
50	502	123	50	36	108	124	60	18	23
51	491	64	9	7	107	109	61	24	44
52	481	70	11	3	78	43	69	17	85
53	473	74	17	16	105	88	67	26	33
54	467	61	4	4	88	63	48	21	74
55	458	54	13	10	105	107	32	16	42
56	457	103	7	7	92	89	74	23	71
57	446	62	15	9	102	91	56	16	57
58	440	111	33	27	109	107	57	18	29
59	400	92	22	15	102	101	68	22	37
60	369	78	28	16	81	115	72	18	24
61	368	41	4	5	98	80	38	17	54
62	359	68	29	15	108	83	56	29	48
63	340	58	16	10	100	110	47	15	39
64	338	76	16	12	110	104	52	16	48
65	330	89	24	16	84	111	61	20	29
66	312	67	14	9	105	89	52	29	55
67	310	49	14	10	107	111	37	14	34
68	281	59	14	12	97	106	51	15	29
69	274	62	37	17	95	93	43	16	24
70	265	26	10	6	85	86	24	10	41
71	258	67	11	12	109	94	59	16	37
72	255	101	34	18	100	99	69	23	38
73	253	96	30	15	102	106	64	17	37
74	249	68	26	16	89	96	49	17	29
75	218	75	41	26	99	115	59	14	9
76	213	41	4	4	88	67	38	13	67
77	207	18	14	8	79	98	18	8	10
78	166	102	35	27	96	96	49	13	19
79	154	28	4	5	89	73	23	13	50
80	143	19	6	7	89	68	17	10	41
81	137	15	1	6	111	65	15	6	18
82	135	28	12	12	99	101	27	9	18
83	132	59	9	10	89	70	50	26	50
84	116	65	10	10	90	96	56	20	47
85	65	103	30	18	110	91	49	26	46
86	28	53	17	11	80	84	39	13	37
87	10	57	20	14	104	99	36	15	21
88	4	60	10	6	103	100	53	17	58
89	− 7	66	17	19	108	86	44	15	24
90	− 20	83	37	25	82	112	54	13	10
91	− 26	23	7	5	103	56	23	9	53
92	− 67	62	15	12	84	75	53	18	39
93	−132	49	30	17	90	107	38	15	17
94	−224	31	23	9	64	68	27	8	10
95	−244	86	20	6	83	62	68	29	75
96	−262	248	84	42	99	98	93	30	41
97	−270	65	35	13	86	90	43	21	26
98	−312	51	25	9	89	40	33	21	53
99	−387	128	47	30	100	93	60	19	27
100	−802	121	92	37	86	78	84	19	22
Average, all farms	558	93	26	20	100	100	56	20	36
Average, highest 10	1,659	195	44	45	106	119	75	26	32
Average, lowest 10	−273	86	38	18	88	77	52	19	36

Farms may also be grouped with reference to each of the factors shown in the table. If they be grouped with reference to the number of crop acres, it will be found that of the 20 farms leading in number of crop acres 15 had labor incomes higher than the average labor incomes of the 100 farms, and 5 had labor incomes below the average; while of the 20 farms lowest in number of crop acres only four had labor incomes above the average and 16 below the average.

A comparison of the labor incomes of the 20 farms highest in amount of live stock (productive animal units) with the lowest 20, shows that 15 of the former group and only 2 of the latter group had labor incomes above the average.

Fourteen of the 20 farms highest in crop yields had labor incomes above the average, while each of the 20 farms lowest in crop yields failed to reach the average labor income of the region.

By selecting the 20 farms with the highest returns from live stock per animal and the 20 with lowest returns per animal, we find that 15 farms of the former group and only 3 farms of the latter group had labor incomes above the average of that of the 100 farms.

Selecting the 20 farms having the highest number of crop acres per man and the 20 farms having the lowest, we find that of the highest 20 fifteen had labor incomes above the average, and of the lowest 20 only 3 had labor incomes above the average.

Ten of the 20 farms leading in number of crop acres per horse had above the average labor income, while only five of the 20 lowest in crop acres per horse had more than the average labor income.

When making studies of Table VIII it should be kept in mind that the data shown therein represent a seven-year average for each farm, so that the influence of any condition of uncommon occurrence on a given farm is largely eliminated.

The data in Table VIII also lend themselves to an interesting study in range in crop yields, live-stock returns and crop acres per man and per horse, since it is based upon an average of seven years' results. Crop yields did not exceed 18 per cent above the average on any farm, and only three were 20 per cent or more below the average. Live-stock returns show a wider range; the farm with the highest returns was 40 per cent above the average and that with the lowest 60 per cent below. On the latter farm, however, 53 per cent of the owner's receipts were from the sale of crops. The farmer who receives the greater part of his income from his live stock will seldom fall below 75 per cent of the average returns in his locality when averaged for a period of years, but for any one year the variation both in live-stock returns or crop yields may be more pronounced. On one farm an average of 96 acres of crops per man and 30 per horse were worked and the yields were 12 per cent above the average. This was a large farm, with 344 acres in crops, and 29 per cent of the total receipts were from crop sales. On another farm only 15 acres per man and 6 acres per horse were worked. This was a very small farm and a part of the operator's time with his team was spent at outside work.

THE WISCONSIN AREA.

The area in Wisconsin is more or less typical of dairying in southern Wisconsin, and is located but a few miles west of Madison. The surface is rolling to hilly and only the main wagon roads are improved.

THE FARM BUSINESS.

A summary of the farm business for the 60 farms over the five-year period 1913 to 1917 is shown in Table IX.

Distribution of the Farm Area.

The farms averaged 148 acres, with 51 acres in pasture, 28 acres in corn, 25 acres in oats, and 22 acres in hay. Ninety-two per cent of the crop land was occupied by these three crops.

In figure 14 the distribution of the farm area is shown graphically for the average of the 60 farms over the five-year period. The crop area occupied 54 per cent of the farm area, tillable pasture 19 per cent, untillable pasture 7 per cent, woodland not pastured 9 per cent, and waste, roads, building lots, etc., 6 per cent. There was practically no difference in the distribution for the various years.

Figure 15 shows graphically the average distribution of the crop area. The three leading crops in the organization of these farms are corn, oats, and hay. For four out of the five years the proportion of the crop acreage devoted to these crops was remarkably uniform. In 1916 the corn acreage was short and the hay acreage was increased. The acreage of oats was also increased slightly this year. There was a great variation in the way in which the corn crop had to be utilized in this area. For the years 1913, 1914, 1915, and 1916 the greater share of the crop was harvested for grain. In 1915 and 1917, owing to early frosts, the greater share was cut as fodder corn. The acreage put in the silo increased during the period of study.

CROP YIELDS.

The five-year average yield of corn was 28 bushels per acre, of oats 33 bushels, and of hay 1.7 tons. The yield of corn varied from 19 bushels per acre in 1915 to 36 bushels in 1913. The yield of oats showed less variation than that of corn, ranging from 26 bushels per acre in 1914 to 37 bushels in 1917. Only 2 per cent of the total production of corn was sold, 5 per cent of the oats, and 3 per cent of the hay. Thus practically all the crops grown were fed on the farms and the crop sales were only 3 per cent of the total farm receipts.

TABLE IX.—*Summary of the farm business over a period of five years, 1913–1917, Verona township and adjoining townships, Dane County, Wis.* (*average of 60 farms*).

	1913	1914	1915	1916	1917	5-year average.
Acres per farm	149	150	146	147	147	148
Acres in pasture	52	52	50	51	51	51
Acres in corn	29	29	29	26	29	28
Acres in oats	25	25	26	27	24	25
Acres in hay	22	22	21	24	23	22
Acres in other crops	6	5	4	3	5	6
Corn per acre ... bushels	36	32	19	34	23	28
Oats per acre ... do	32	26	35	36	37	33
Hay per acre ... tons	1.8	1.7	1.6	1.6	1.9	1.7
Productive animal units	30.5	30.8	30.1	31.3	30.7	30.7
Brood sows ... number	7.6	7.6	6.7	6.2	6.6	6.9
Cows ... do	15.6	16.3	16.5	17.7	18.6	16.9
Work stock ... do	4.6	4.7	4.7	4.8	4.9	4.7
Receipts per animal unit	60	57	60	76	101	71
Total labor ... months	22.1	22.9	21.5	22.9	23.0	22.5
Farm capital	**$17,307**	**$17,596**	**$17,451**	**$17,803**	**$18,305**	**$17,692**
Real estate	14,762	14,829	14,641	14,847	14,928	14,802
Live stock	1,740	1,918	1,965	2,101	2,359	2,016
Machinery	462	473	480	489	500	481
All other	343	376	365	366	518	393
Real estate per acre	99	99	100	101	101	100
Receipts	**1,961**	**$1,841**	**$1,858**	**$2,560**	**$3,278**	**$2,300**
Sources (per cent)						
Dairy products	42	45	49	50	53	49
Hogs	33	30	25	27	28	28
Cattle	12	14	17	14	12	14
Poultry	4	4	4	4	3	4
All other	9	7	5	5	4	5
Expenses	$882	$906	$917	$1,043	$1,288	$1.007
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
Hired labor	16	21	18	18	15	18
Unpaid family labor	22	20	19	22	21	21
Repairs and depreciation:						
Machinery	7	7	7	7	7	7
House	4	4	3	3	3	3
Other buildings	6	6	7	7	6	6
Repairs, fences	3	3	3	2	2	2
Feed purchased	12	10	15	12	17	13
Seed purchased	3	2	2	2	3	3
Fertilizer	(*a*)	(*a*)	(*a*)	(*a*)	(*a*)	(*a*)
Machine work hired	4	4	4	5	4	4
Taxes and insurance	16	15	15	15	13	15
Other	7	8	7	7	9	8
Farm income	**$1,079**	**$935**	**$941**	**$1,517**	**$1,990**	**$1,293**
Interest on capital, 5 per cent	865	879	873	891	915	885
Labor income	**214**	**56**	**68**	**626**	**1,075**	**408**
Operator's labor	401	429	443	479	575	465
Return on capital, per cent	**3.9**	**2.9**	**2.9**	**5.8**	**7.7**	**4.7**
Value of family labor	192	185	175	232	276	211
Interest on indebtedness [1]	115	115	115	115	115	115
Family income	**1,156**	**1,005**	**1,001**	**1,634**	**2,151**	**1,389**
Family living from farm [2]	**351**	**356**	**342**	**388**	**525**	**392**
Amount sold:						
Milk ... pounds	67,080	74,165	78,788	81,420	80,910	76,473
Hogs	39.8	35.0	33.8	30.2	33.5	34.5
Calves	8.8	8.4	9.4	9.3	11.9	9.6
Prices:						
Milk ... hundredweight	1.23	1.12	1.16	1.58	2.16	1.46
Hogs ... do	7.36	7.36	6.51	8.72	15.73	9.14
Calves	8.86	8.72	9.77	12.31	13.28	10.59

[a] Less than one per cent.

[1] Data for "interest on indebtedness" obtained in 1913 and assumed to be the same for the other years.

[2] From U. S. Department of Agriculture Bulletin 410 and index numbers for "cost of living" published by the "Annalist."

AMOUNT OF LIVE STOCK.

The amount of live stock per farm, expressed in terms of mature cattle, was 30.7 head, besides an average of 4.7 work horses. This is an average of one head to each 4.4 acres of crops and pasture. The

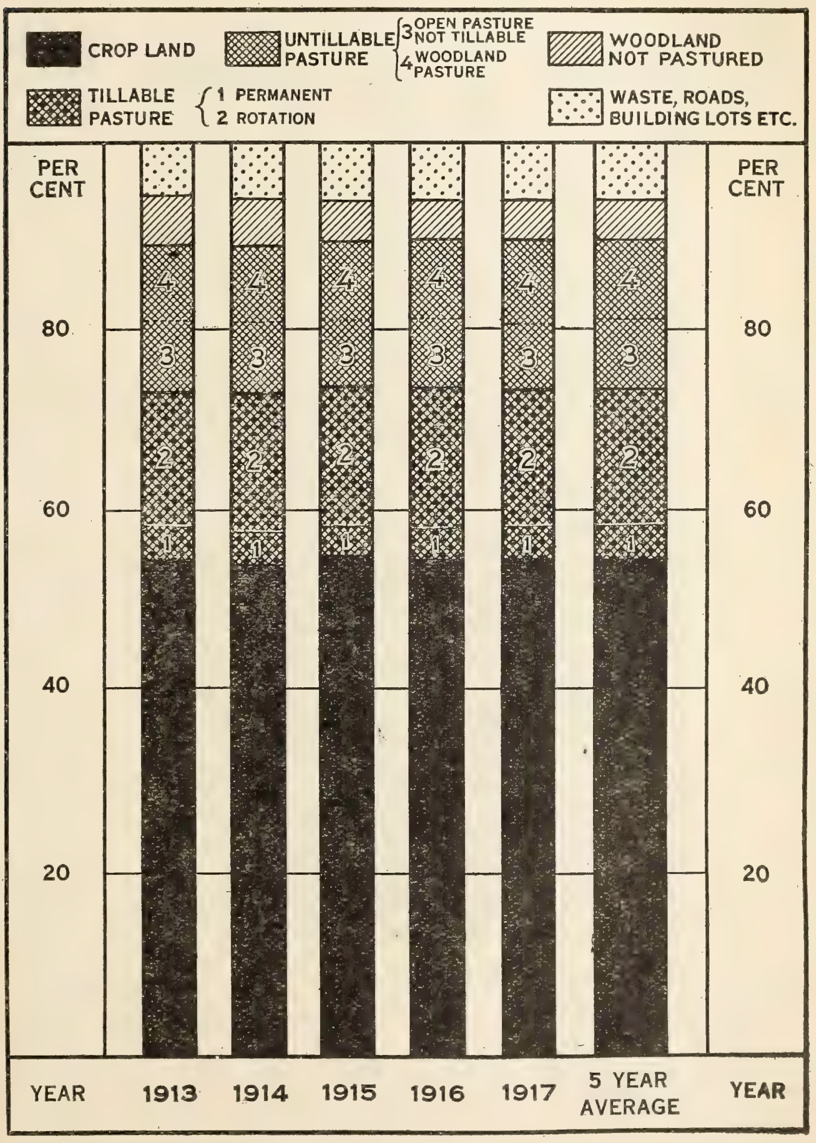

FIG. 14.—Distribution of farm area on 60 farms in Verona township, Dane County, Wis. About three-fourths of the land area on these farms is tillable. The utilization of the farm area for crops and pasture was nearly identical for each year. Most of the pasture and crop areas are used in supporting the dairy herd.

live stock consists mostly of dairy cows and accompanying young stock. From 1913 there has been a gradual increase in the number of cows and some decrease in the number of brood sows. Comparing the first two years with the last two, cows increased 14 per cent and brood sows decreased 16 per cent.

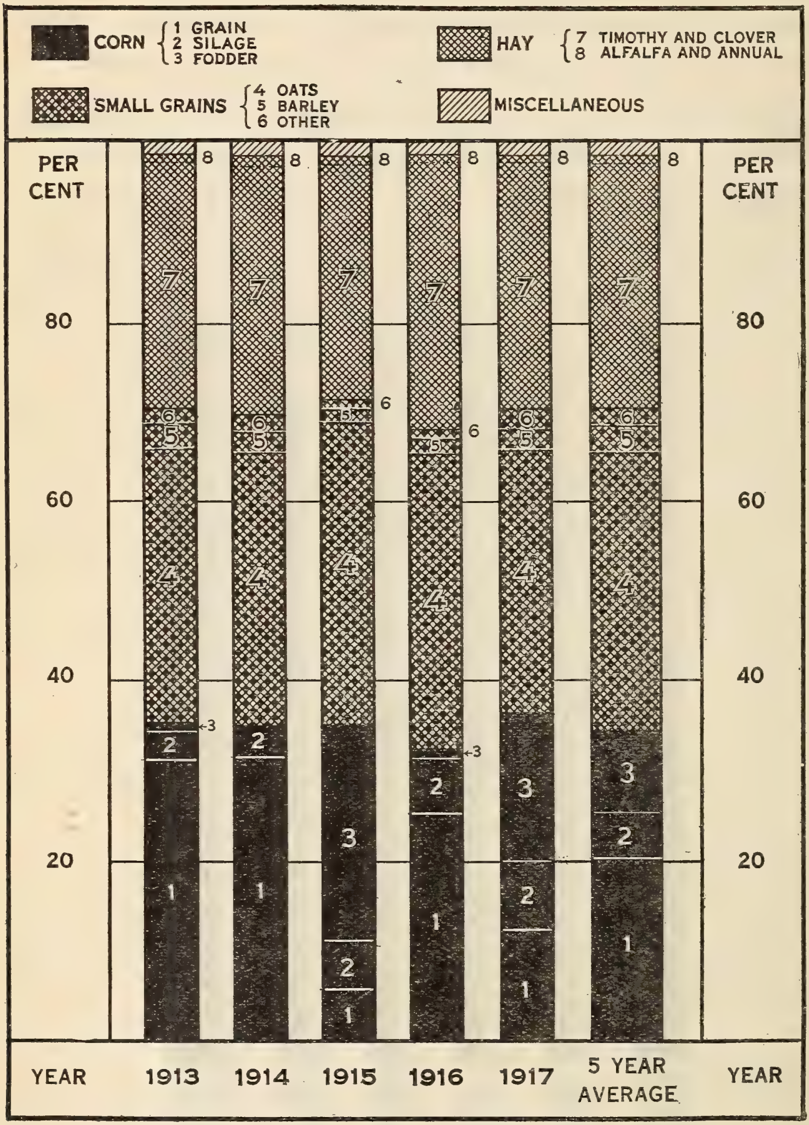

FIG. 15—Distribution of crop area on 60 farms in Verona township, Dane County, Wis. Corn, oats, and hay are the leading crops. The season has a great influence upon the practices for various years in handling the corn crop. The years of poorest corn yields were 1915 and 1917.

LABOR REQUIRED.

It required 22.5 months of labor per year to operate these farms, 12 months for the farmer himself, 4.4 months for hired labor, and 6.1 months for family labor. Thus 80 per cent of the work was done by the operator and his family, and 20 per cent hired.

FARM CAPITAL.

The capital value of these farms for the five-year period averaged $17,692; 84 per cent of which was in real estate, 11 per cent in live stock, 3 per cent in machinery, and 2 per cent in supplies and cash. Real estate averaged $100 per acre. The value of land, exclusive of buildings, averaged $12,137 per farm, or 69 per cent of the total farm capital.

RECEIPTS.

The farm receipts in this area (Table IX) averaged $2,300 per farm for the five-year period. They were higher in 1913 ($1,961) than in either 1914 or 1915, due primarily to the decline in the price of milk for these two years. In 1916 the price of milk was advanced, and this together with an increase in the number of cows raised the receipts to $2,560 per farm. In 1917 these same factors aided in increasing the receipts to $3,278 per farm.

Figure 16 shows graphically the average distribution of receipts for each year and for the average of the five-year period. This chart shows the great importance of the live-stock business in the organization of these farms. In 1913 fully 93 per cent of the total income was from live stock, with 4 per cent from crops, while in 1917 live stock represented 96 per cent of the total receipts and crops only 2 per cent. The sale of dairy products heads the list of receipts. In 1913 42 per cent of the income was from this source, and this percentage increased during the period to 53 per cent in 1917. A decrease in the number of hogs for sale was mainly responsible for the decrease in the proportion of receipts from hogs.

EXPENSES.

The expenses connected with operating these farms, above those of interest on capital and the value of the farmer's own labor, averaged $1,007 for the five-year period, increasing from $882 per farm in 1913 to $1,288 in 1917. The largest four items of expense, in order, were family labor, hired labor, taxes and insurance, and feed purchased. These four represented two-thirds of the total expense.

In figure 17 is shown the relation of each of the more important items of expense to the total. The increase in expenses during the period had little effect upon the relative importance of the various items. The poor corn yields in 1915 and 1917 increased the expense for purchased feed these years.

FARM EARNINGS.

The farm income for the five-year period averaged $1,293 per farm. For two years the average was less than $1,000, and for the last two years it exceeded $1,500. The five-year labor income

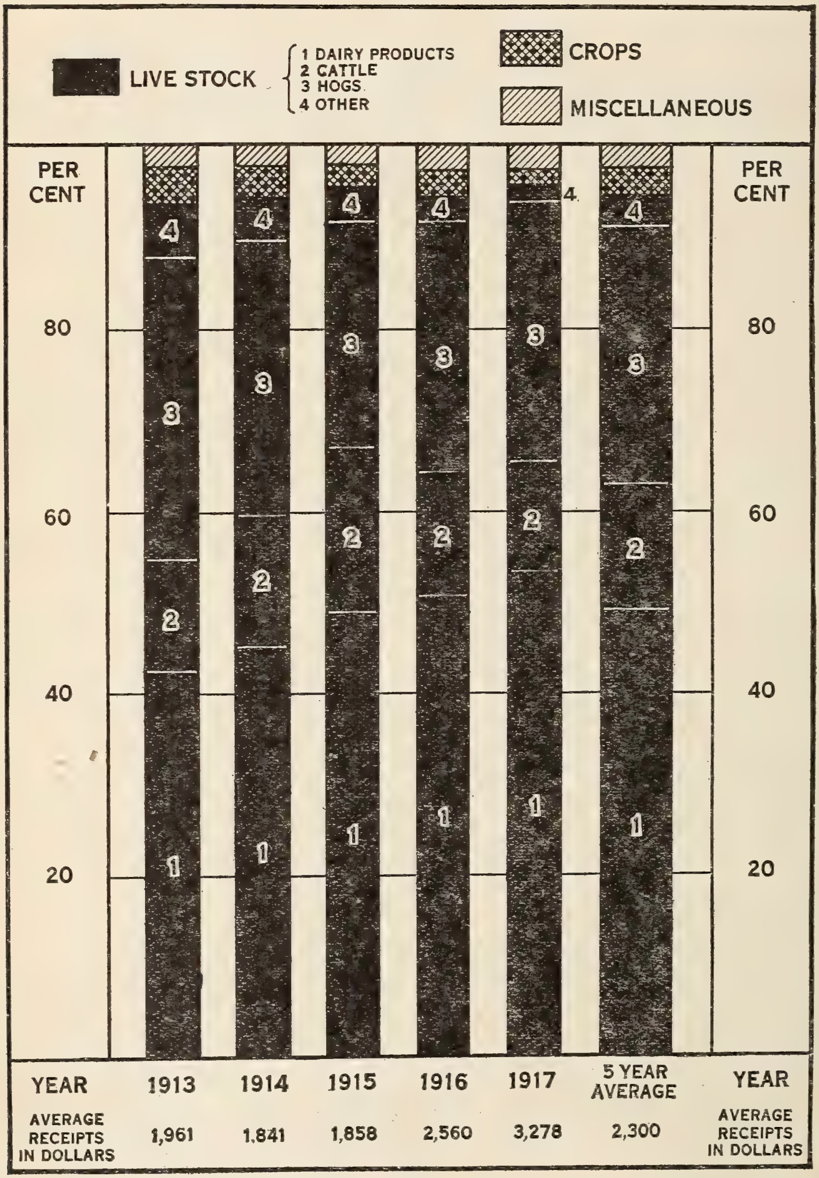

FIG. 16.—Distribution of receipts on 60 farms in Verona and adjoining townships, Dane County, Wis. In 1913 live stock returned 93 per cent of the farm receipts, and in 1917 96 per cent. Five-sixths of the income was from the dairy herd and hogs, the receipts from dairy products showing the greatest gain over the period of study.

averaged $408, ranging from $56 in 1914 to $1,075 in 1917. The return on farm capital averaged 4.7 per cent, ranging from less than 3 per cent in 1914 and 1915, to 7.7 per cent in 1917. Beginning with the year 1916, prices of farm products sold showed a marked

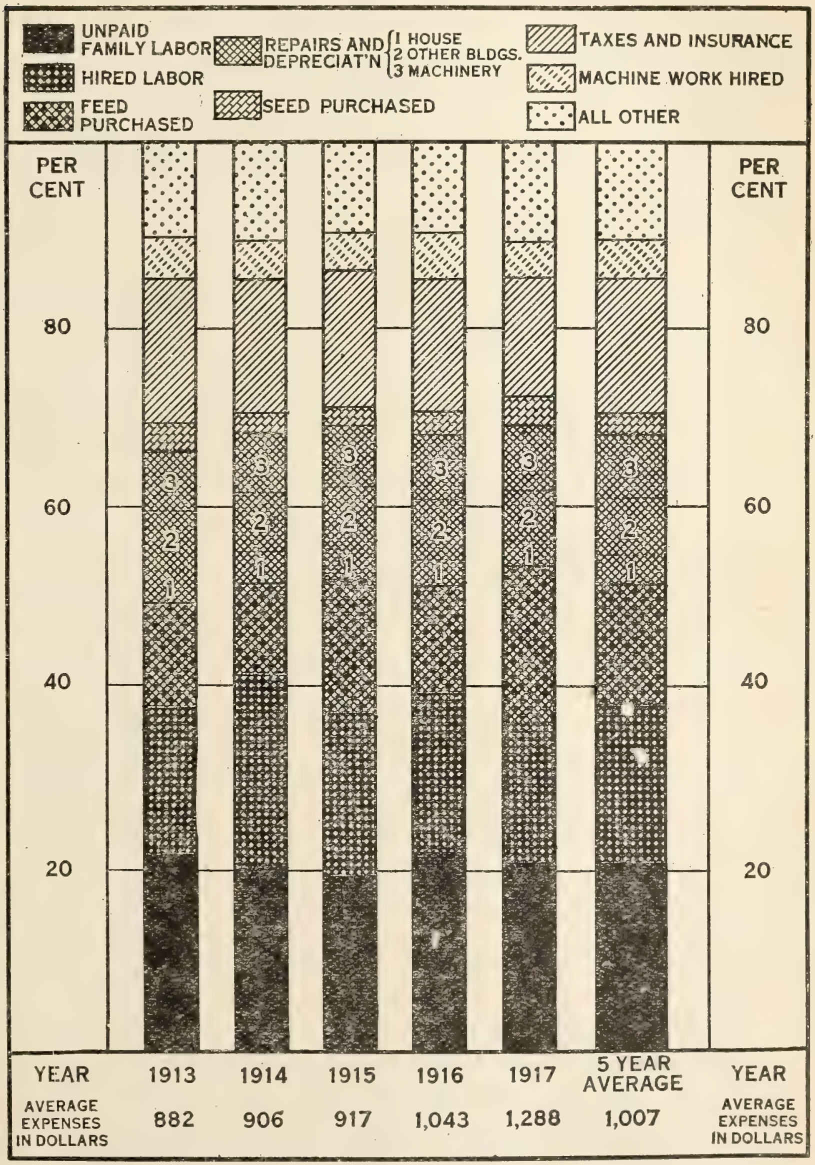

FIG. 17.—Distribution of expenses on 60 farms in Verona and adjoining townships, Dane County, Wis. Family labor is a considerable item on these farms. The poor corn yield in 1915 and 1917 (see Table IX) made an increased feed expense necessary for these years. Expenses increased 46 per cent over the period of study, but the relative importance of the various items made only slight change.

increase, and while the average labor income of the 60 farmers for the three years 1913, 1914, and 1915 was but $113, for the two years 1916 and 1917 it was $850. The return on capital for the earlier period was 3.2 per cent and for the latter period 6.8 per cent.

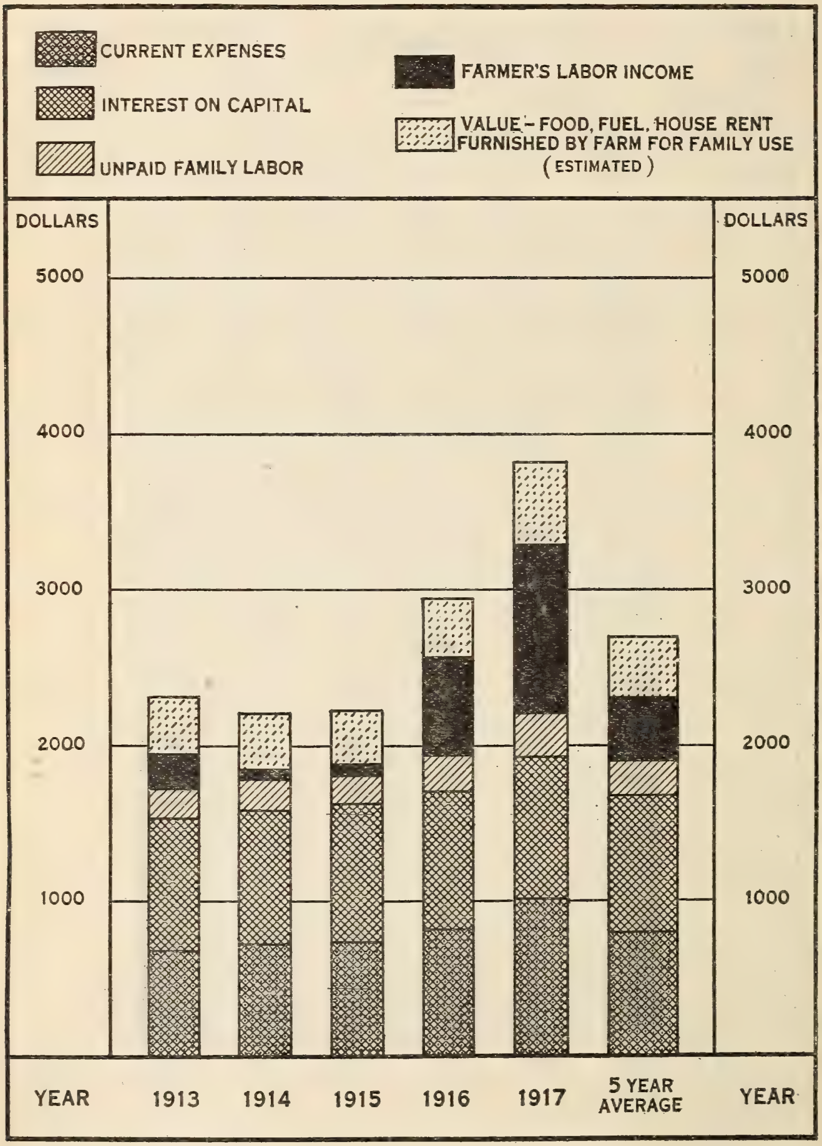

FIG. 18.—Distribution of the gross income on 60 farms in Verona and adjoining townships, Dane County, Wis., 1913–1917. In 1916 and 1917 receipts increased more than expenses, which left the farmer more pay for his own year's wages (labor income) than for former years. This distribution of income shows how farmers may have a considerable income to spend even in years with low labor incomes. If free from debt the interest on investment and value of family labor may give the farm family considerable income to dispose of.

Figure 18 shows graphically the distribution of the average gross income on the 60 farms for each year and for the five-year average. This chart shows how much of the gross income is represented in operating expenses, interest on capital, unpaid family labor, and food products, fuel, and house rent furnished by the farm. As in the case of both the Ohio and Indiana groups, both receipts and expenses increased materially during the last two years, the former more rapidly than the latter, so that the spread between the two became wider, thus increasing the farmer's wages (labor income).

The interest on capital averaged $885 per farm for the five-year period, with no appreciable change over the period. The chart shows how it may be possible for some farmers to have fairly large incomes to dispose of, even though their labor incomes may be small. With the farms that are free from debt the item of interest does not have to be paid out and is therefore available for other purposes.

In Wisconsin Experiment Station Bulletin No. 300, the discussion of receipts, expenses, and profits over the period of study in this area is summed up as follows:

> In the years 1914 and 1915 both the gross receipts and farm profits fell below the level of 1913. In 1916, the year prior to our entering the war, farm receipts increased appreciably and were followed by a still greater increase in 1917.
>
> In both of these years the expenses increased, but not so rapidly as the income; hence there was an increasing proportion of the gross income left for the farmer's profits, or labor income.
>
> The study shows that the higher profits of 1916 were due in part to better crops, but more largely to higher prices, and that the relatively high returns in 1917 must be attributed entirely to high prices, because the crops were poorer.

FAMILY LIVING FROM THE FARM.

The estimated value of the family living from the farm in this area amounted to $392, or nearly as much as the labor income. Owing to advances in prices this value increased from $351 in 1913 to $525 in 1917.

PRODUCTS SOLD AND PRICES RECEIVED.

The lower part of Table IX shows the quantity of the more important products sold and the prices received during the period. The amount of milk sold per farm increased from 67,080 pounds in 1913 to 80,910 pounds in 1917. Comparing the first two years with the last two, the average production of milk per cow increased only 50 pounds, which means that the most of this increased production came from increasing the size of the dairy herd. An average of 34.5 hogs were sold per farm and 2.5 produced for family use.

TABLE X.—*Labor incomes of 60 farms in Verona and adjoining townships, Dane County, Wis., 1913–1917.*

(Ranked according to size of the five-year average labor income.)

Rank.	5-year average.	1913	1914	1915	1916	1917
1	$1,337	$865	$1,322	$111	$2,367	$2,018
2	1,164	2,773	−376	863	484	2,076
3	1,137	869	1,413	517	1,088	1,800
4	1,106	469	942	722	1,326	2,070
5	1,044	596	449	517	1,460	2,197
6	1,010	211	238	57	2,438	2,104
7	1,001	908	515	740	842	2,000
8	997	869	459	370	1,507	1,780
9	874	265	920	67	1,555	1,561
10	869	964	−159	510	1,233	1,797
11	777	411	677	690	892	1,214
12	773	457	−200	223	2,101	1,286
13	769	209	155	−54	1,449	2,085
14	756	−81	94	772	1,644	1,353
15	731	779	−680	−650	1,949	2,255
16	703	516	89	120	1,071	1,719
17	684	1,619	839	88	−140	1,013
18	642	343	188	524	884	1,273
19	603	514	−179	−248	1,174	1,756
20	598	−50	−302	270	1,166	1,907
21	565	201	31	97	196	2,298
22	557	777	324	121	262	1,299
23	529	236	21	277	857	1,255
24	524	224	142	250	795	1,210
25	512	112	378	369	561	1,141
26	468	424	−151	128	567	1,374
27	456	779	247	−256	587	924
28	441	528	263	185	611	618
29	421	−27	−269	310	679	1,411
30	416	7	254	−87	384	1,522
31	402	266	302	472	274	694
32	367	552	−55	24	669	647
33	349	283	159	−56	483	874
34	342	−714	−455	368	875	1,634
35	331	−50	−72	88	647	1,041
36	313	236	156	−46	430	790
37	252	69	13	3	490	684
38	246	30	−117	−176	102	1,391
39	239	1	−365	294	407	858
40	233	−98	148	162	−15	968
41	221	417	249	−49	−41	53
42	206	196	417	−227	260	384
43	201	−17	199	−102	117	708
44	192	−201	−406	−363	540	1,390
45	182	−50	−91	360	286	406
46	175	−188	220	−146	194	797
47	137	158	−149	423	130	122
48	98	−45	−115	109	478	64
49	39	−38	24	−204	217	197
50	22	−129	−457	485	103	109
51	−20	−118	−94	−340	357	93
52	−37	−5	−266	−308	−152	547
53	−57	11	−48	−258	−410	420
54	−100	−301	−330	−47	102	77
55	−161	−531	−591	−687	910	93
56	−310	−567	−386	−637	−443	481
57	−315	−275	−434	−423	−312	−131
58	−347	−1,584	−317	−927	−162	1,253
59	−593	−490	−964	−455	−660	−397
60	−598	−747	−574	−866	−267	−534
Average	408	214	56	68	626	1,075
Maximum	1,337	2,773	1,413	863	2,438	2,298
Minimum	−598	−1,584	−964	−927	−660	−534
Index[1]	100	52	14	17	154	264

---

[1] Represents the percentage the labor income each year is of the seven-year average ($408=100).

TABLE XI.—*Per cent return on capital on 60 farms in Verona and adjoining townships, Dane County, Wis., 1913–1917.*

(Ranked according to size of the 5-year average labor income).

Rank.	5-year average.	1913	1914	1915	1916	1917
1	7.2	5.9	7.0	4.0	10.3	9.0
2	6.6	12.2	2.0	5.8	4.4	9.0
3	8.6	6.9	8.7	5.1	8.8	13.2
4	8.2	4.9	7.6	6.3	9.8	12.6
5	7.4	6.1	4.7	5.1	9.2	11.7
6	6.8	4.5	4.4	3.7	11.7	10.0
7	8.2	8.4	4.8	6.6	6.9	14.1
8	6.2	6.2	4.4	4.0	8.1	8.1
9	6.1	4.3	7.5	3.1	10.4	5.3
10	6.0	6.5	2.9	5.0	7.1	8.6
11	6.9	5.2	9.0	9.0	10.2	1.4
12	6.9	5.6	2.0	4.2	13.5	9.4
13	6.5	4.1	3.7	2.5	11.0	11.0
14	5.9	2.9	3.7	6.1	9.3	7.6
15	5.5	6.0	1.2	1.3	9.4	9.8
16	6.0	5.6	3.3	3.4	7.6	10.3
17	5.3	8.4	5.9	3.8	3.2	5.3
18	5.3	4.4	3.1	4.9	6.5	7.5
19	5.4	5.3	1.5	1.2	8.4	10.6
20	5.7	2.2	.7	4.1	8.9	12.4
21	6.2	3.7	.9	1.5	2.9	22.0
22	4.8	6.6	4.0	2.8	3.3	7.5
23	5.7	4.0	2.8	4.3	7.7	9.6
24	5.2	2.7	1.0	2.1	8.4	11.8
25	5.0	2.7	4.3	4.1	5.4	8.6
26	5.1	5.1	1.9	3.2	5.6	9.6
27	4.5	6.5	3.6	1.0	4.9	6.6
28	5.8	6.3	4.2	3.6	7.0	8.0
29	4.6	2.7	1.5	4.5	5.8	8.5
30	5.0	2.8	4.2	2.4	5.2	10.4
31	5.0	4.7	4.6	5.3	4.5	5.7
32	3.3	6.5	−1.7	−1.4	7.3	5.6
33	4.0	4.0	3.0	1.5	4.9	6.8
34	3.5	−1.7	−.2	4.0	6.1	9.4
35	3.7	1.1	.5	2.0	6.2	8.9
36	4.9	4.3	3.4	1.2	5.8	9.6
37	2.0	.4	−.1	−1.3	4.9	6.0
38	3.4	2.8	1.8	1.5	2.7	8.1
39	3.6	2.2	−.2	4.3	4.7	7.4
40	2.5	−.2	1.8	2.0	1.0	7.8
41	3.5	5.6	3.9	.8	.9	6.4
42	3.5	3.8	5.1	1.3	3.6	3.8
43	3.5	2.0	4.3	1.6	2.8	6.6
44	3.4	1.1	−.5	.2	5.9	10.6
45	3.0	1.7	1.4	5.0	3.4	3.5
46	3.8	2.2	4.3	2.5	4.0	5.9
47	.9	2.0	−4.0	6.4	.6	−.6
48	2.7	2.3	1.6	2.3	5.0	2.2
49	.8	.1	.7	−2.4	3.1	2.3
50	1.5	.3	−2.6	5.8	2.7	1.5
51	.6	.1	.3	−2.1	3.8	.9
52	2.1	3.1	1.8	.3	.5	4.6
53	.9	1.6	1.1	−.7	−1.8	4.5
54	1.0	−.3	−.3	1.7	2.1	1.6
55	2.6	1.5	1.1	.6	6.4	3.4
56	−2.1	−3.6	−2.6	−4.8	−3.3	4.0
57	−2.4	−1.2	−3.0	−3.5	−2.5	−1.6
58	2.6	−1.4	2.8	.9	3.3	7.3
59	−1.1	−.1	−3.2	−.1	−1.7	−.3
60	.7	.4	.9	−.5	2.1	.6
Average of farms	4.2	3.4	2.4	2.6	5.3	7.2
Maximum	8.6	12.2	9.0	9.0	13.5	22.0
Minimum	−2.4	−3.6	−4.0	−4.8	−3.3	−1.6
Index [1]	100	81	57	62	126	171

---

[1] Represents the percentage the returns each year are of the seven-year average (4.2=100).

The price received for milk greatly affects the farm returns in this area. As previously pointed out, the decline in the price of milk for the years 1914 and 1915 was the largest single factor tending to decrease the income. Comparing the first two years with the last

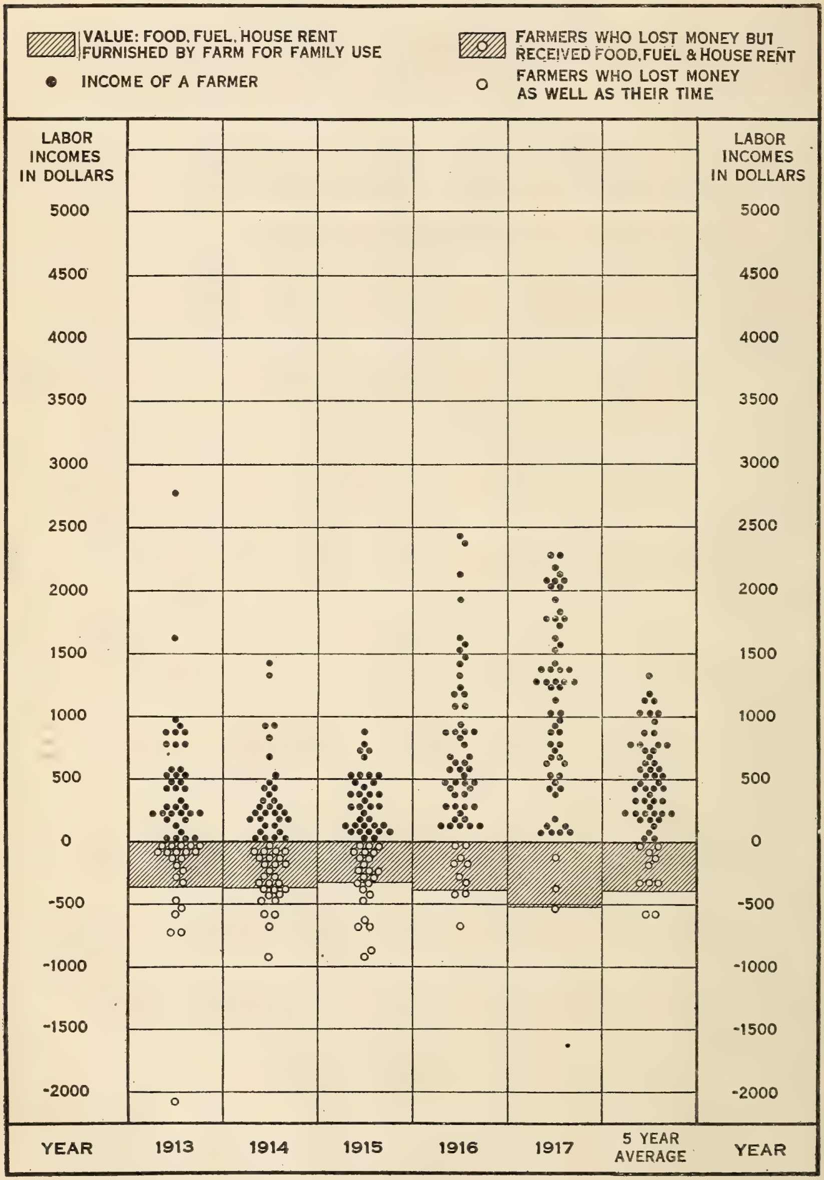

FIG. 19.—The labor incomes of 60 farmers in Verona and adjoining townships, Dane County, Wis., 1913–1917. Each dot represents the labor income of one farmer. The farmers shown in the shaded area had only the food products, fuel and house rent, as pay for their own labor, and received a return on capital invested of less than 5 per cent. Those shown below the shaded area had losses in addition to this.

two, milk increased 59 per cent in price and farm receipts increased 54 per cent.

LABOR INCOME AND RETURN ON CAPITAL OF THE 60 FARMS OVER THE FIVE-YEAR PERIOD.

Tables X and XI show the labor income and return on capital of each of the 60 farmers over the five-year period 1913–1917, arranged in order of the five-year average labor income. The labor incomes are also shown graphically in figure 19.

It will be noted from Table X that nineteen of the 60 farmers made a labor income each year, 15 for four and 15 for three of the five years, 5 for two years, and 3 for one year, and that 3 did not make a labor income in any of the five years.

None of the farmers reached $1,000 labor income every year of the period. Two farmers had over $1,000 labor income each for three years; 15 for two years, 16 for one year, and 27 never reached $1,000 labor income.

Two farmers made over $500 labor income every year, while 13 failed to reach $500 any year. In 1913, 1 farmer had over $2,000 labor income; in 1914, 2 farmers each had over $1,000 labor income, but none had as much as $1,000 labor income in 1915. In 1916, 15 farmers had over $1,000 labor income and 3 of these exceeded $2,000. In 1917, 33 had over $1,000 labor income, and of these 8 exceeded $2,000. None of the 60 farmers ever reached the $3,000 mark in labor income.

For the five-year average, only 7 farmers exceeded $1,000 labor income, but none reached $2,000; that of 18 farmers ranged from $500 to $1,000; that of the other 35 was less than $500, and 10 of these had no labor income.

About one-tenth of these farmers received in labor income each year as much or more than they valued their labor worth in addition to farm-furnished supplies, about five-tenths for half of the years, and four-tenths for less than two of the five years. Seventeen of these farmers received in labor income what they considered their labor worth in 1913, 5 in 1914, 9 in 1915, 31 in 1916, and 45 in 1917.

It will be noted from Table XI that 25 of the 60 farmers made over 5 per cent interest on the capital invested, and that but 3 of these exceeded 8 per cent. Only one farmer made better than 5 per cent every year, while two failed to make 2 per cent in any year.

FACTORS AFFECTING THE PROFITS OF DIFFERENT FARMS.

Table XII shows for each of the 60 farms the crop area, number of productive animal units, crop yields, live-stock returns, and the number of crop acres per man and per horse. This table indicates the rewards in labor income to those farmers with well-organized and efficiently operated business, as compared with those inefficiently managed.

TABLE XII.—*The 5-year average labor income, crop area, pasture area, productive animal units, live-stock returns, and crop acres per man and per horse for each of 60 farms, Dane County, Wis., 1913–1917.*

Rank of each farm in 5-year average labor income.	Average labor income.	Average crop area.	Average acres in pasture.	Average number productive animal units.	Per cent crop yields were of average.	Per cent live-stock returns per animal were of the average.	Crop acres per man.	Crop acres per horse.	Per cent of total farm receipts from crops.
1	$1,337	132	131	66	93	112	56	17	0.4
2	1,164	133	92	59	113	106	51	17	2.1
3	1,137	76	53	42	100	110	30	13	.7
4	1,106	59	31	33	95	118	38	15	.2
5	1,044	85	59	40	111	99	44	18	3.3
6	1,010	125	85	52	108	101	43	21	4.6
7	1,001	64	14	27	110	115	49	17	.3
8	997	148	74	55	100	91	45	23	.5
9	874	97	55	40	98	107	53	16	3.0
10	869	128	92	54	117	110	44	20	.1
11	777	34	40	20	110	103	28	11	.1
12	773	76	94	35	117	104	41	17	.9
13	769	81	42	30	112	107	52	17	.2
14	756	93	32	33	118	125	54	16	.6
15	731	118	96	60	110	87	47	18	.0
16	703	102	79	42	89	101	49	22	.1
17	684	186	114	62	106	96	60	28	8.6
18	642	73	117	37	91	90	47	17	.0
19	603	115	99	36	99	132	52	21	1.1
20	598	47	24	29	127	112	24	12	.0
21	565	45	32	12	88	99	38	11	.9
22	557	79	61	31	103	99	55	13	.3
23	529	83	28	30	84	115	39	19	.0
24	524	51	23	19	80	96	41	24	.1
25	512	66	34	28	109	106	33	16	.0
26	468	96	39	32	81	118	46	19	.8
27	456	79	57	29	90	94	48	14	2.2
28	441	69	29	20	96	131	26	22	8.5
29	421	100	54	30	99	130	51	18	1.6
30	416	59	35	23	125	104	47	18	3.0
31	402	118	87	31	88	92	51	21	13.0
32	367	58	19	14	80	106	50	17	1.3
33	349	68	25	28	94	104	37	17	.0
34	342	99	73	50	109	97	36	15	.0
35	331	52	44	22	87	82	40	13	.0
36	313	42	18	17	97	100	25	13	2.1
37	252	49	28	22	104	72	34	17	3.7
38	246	74	68	35	120	108	37	15	.5
39	239	82	89	28	97	94	43	16	.7
40	233	45	23	16	110	114	36	12	6.1
41	221	63	14	6	86	79	55	14	61.6
42	206	66	48	33	90	92	39	14	.0
43	201	74	39	33	108	101	33	14	.0
44	192	80	70	27	89	94	47	20	.0
45	182	74	32	19	92	86	63	24	9.8
46	175	67	75	33	108	101	44	14	.7
47	137	25	12	10	118	96	21	12	1.0
48	98	55	44	23	106	100	41	13	3.7
49	39	41	29	13	89	89	37	13	.2
50	22	61	26	19	92	90	46	20	12.5
51	− 20	43	28	18	108	92	30	11	.0
52	− 37	71	29	22	128	89	42	22	19.3
53	− 57	62	10	16	93	97	45	21	7.9
54	− 100	84	31	23	80	103	56	21	.2
55	− 161	120	49	51	93	84	42	10	.5
56	− 310	60	13	18	88	89	30	20	.3
57	− 315	37	23	10	110	66	31	15	5.1
58	− 347	148	97	43	99	85	51	20	1.6
59	− 593	92	43	27	75	51	44	23	4.5
60	− 598	136	53	24	84	86	54	27	17.7
Average, all farms	408	81	51	31	100	100	43	24	3
Av., highest 10	1,054	105	69	48	104	107	45	18	2
Average, lowest 10	− 254	85	38	24	96	84	42	19	6

Farmer No. 1, with the highest labor income, had a comparatively large business when measured by crop area or by number of animal units, and while his crop yields were 7 per cent below the average, practically his entire income was from live stock, which returned 12 per cent more per head than the average of the region.

Farmer No. 60, with the lowest labor income, had as large a business as did No. 1, when measured by crop area, but much smaller when measured by number of productive animal units. His crop yields were 16 per cent below the average and his returns per head of live stock 14 per cent below the average of the region.

Only 5 of the 60 farmers had over 10 per cent of their receipts from the sale of crops.

Crop yields for the 5-year average showed a range of from 25 per cent below to 28 per cent above the average, and live stock of from 49 per cent below to 32 per cent above the average. The highest acreage of crops reported per man was 63, and the lowest 21. The highest acreage of crops per horse was 28 and the lowest 10.

GOOD MANAGEMENT INCREASES PROFITS.

The aim of this bulletin has been to show actual economic conditions as they existed in the three areas herein discussed. While the average profits in each area were rather low, and while many farmers made very low profits, yet the well-managed farms gave much larger returns, as pointed out previously. Each farmer is given his place on the labor income charts (figs. 7, 13, and 19) for each year. Figure 19 has been discussed in Wisconsin Experiment Station Bulletin No. 300 as follows. (This discussion has also a general application to the findings for the Ohio and Indiana areas.)

> This [chart] shows what skill, energy, and good management can do in the way of winning a good labor income at a time when other farmers are losing money. The fact that under most favorable conditions with respect to prices some farmers win no labor income beyond things furnished the family by the farm, helps one to understand why there may be discontent among the farmers when at the same time many farmers are known to be prospering. It is not to be expected that prices will be high enough to give a labor income to the indolent and inefficient, but it is necessary that the industrious, competent farmers be amply paid for their products if the business of farming is to continue to improve.
>
> In farming, as in other occupations, the prizes are for those who have ability. The wide range in labor income shown in figure 19 and more accurately arrayed in Table X, gives evidence that the man of skill, industry, and judgment can hope to earn a handsome income by operating a farm.
>
> This is the ground for hope that there will ever be those who can climb the ladder to independence. But with this hope for the man at the head of the class goes the gloomy outlook for the man at the foot of the class.
>
> The number of farmers who made a minus labor income in the years 1913, 1914, and 1915 is entirely too great. On the average for the five years one out of every six farmers netted a loss ranging from $20 to $598, omitting what the family received from the farm. This would seem to be too high a percentage of submerged farmers

even with war prices in 1916 and 1917 to bring up the average for the five years. Yet it must be admitted that under the same conditions more than half the farmers made labor incomes which, when combined with what the farm furnished the family, put them in a position to get ahead financially year after year. The future of American agriculture demands that the road be kept open to the top. A high percentage of the young farmers must be able to save from their earnings and buy farms. This requires adequate prices, and while there is no law of human justice which demands that prices be so high that the man without ability and willingness to work successfully under his own guidance shall be made to flourish as the manager of a farm, prices should be high enough to give at least five out of six a labor income. It took the prices of 1916 and 1917 to bring the Verona farmers up to this level and to give them a 5-year average labor income of $408.

From the study of the profits of the farms in the three areas we have seen that the incomes of most farmers were much higher during the last few years than for previous years. In this connection it must be remembered, however, that the increase in income is more apparent than real because of the decreased purchasing power of the dollar.

Whether or not farmers have bettered their conditions through this increased income depends upon the way in which the additional income is used. If the additional money is used in better equipping the farm, providing more conveniences, or, in other words, raising the standard of living on the farm and in the farm home, and a more satisfactory rural social life results, the industry and the rural population have been benefited. On the other hand, if this increased income becomes absorbed in increased land value, it may be of immediate advantage to those selling out of the business but may react upon those who purchase farms by going in debt for them. These purchasers must make interest on the investment, enough for their own wages and management, pay living expenses, and make payments upon the principal. The harm comes when men purchase farms with the idea of paying for them out of the results of their labor and management and at the same time maintaining or improving their standard of living, but later find that they are unable to do this because the land values were not based upon what the land yields.

O

ADDITIONAL COPIES
OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT
15 CENTS PER COPY
▽